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Directing attention to the 103rd anniversary of the Navy Medical Corps on 3 March 1974, an historic front cover scene pits an American hospital unit against ancient Greek ruins at Paestum, in September 1943, following landings at Salerno, Italy.

The photo on page 2 reveals the cake-cutting ceremony during festivities marking the 102nd Navy Medical Corps birthday at NNMC, Bethesda, Md., in 1973.

The continued support of the Illustrations & Exhibits, and the Photography Divisions of the Media Department, Naval Medical Training Institute, NNMC, Bethesda, Md., is gratefully acknowledged.



from the Chief

A Navy Medical Inspector, Benjamin F. Gibbs, in the early 1870s recommended the continued making and use of distilled water on ships for it "has swept away from the list of disease formerly so commonly endemic on board ship." He was speaking of dysentery, diarrhea, and typhoid fever. Though the demands upon the Medical Corps have increased incalculably since the 1870s, there are some traditional tenets that have remained essentially the same. If that 19th century Navy physician were transported in our midst today, the vast array of knowledge, research activities and methods of health care delivery would perhaps be incomprehensible to him. However, this same 19th century physician would have no trouble understanding our commitment to provide our patients with the best care available of the times and to maintain a viable, high quality Medical Corps, for these too were his goals.

We who are entrusted with Navy medicine in the 1970s have inherited a tradition of professional growth, development, progress and excellence — the hallmarks of Navy medicine before and since Dr. Gibbs' time.

Collectively, the Medical Corps of our generation, in consort with the other corps and our civilian employees, has upheld these traditions. These hallmarks have held us in good stead through major wars, and national and international crises. For after all, we exist only to support the Naval services — we have consistently met that goal, and I am confident of our ability to continue to do so.

On the other hand, we face a challenge today unlike any faced by Dr. Gibbs and one that is completely foreign to the Medical Department of our generation. Our right to exist as a Navy Medical Department is now under debate — past generations of quality service notwithstanding. Our heritage is not in question. That shall always remain intact. However, the elements of service which have been our hallmarks for so long will have to undergo new and stringent tests — weighted against the socioeconomic health trends prevalent in our nation today. Professionalism, growth, development, progress, and excellence will be measured in the cold terms of cost-effectiveness. Although cost-effectiveness is not new to Navy Medicine and Dentistry — it too, has been a function of ours long before Dr. Gibbs' time — this will be the first time in our history when our very survival as the health care arm of the Navy will hinge on it. Heretofore, quality health care has been measured against standards established by the Navy; among them were the standards of need and effectiveness. Now, however, this same quality care will be reviewed by agencies outside of Navy, and measured against the standards of national needs and the relative cost of this care to that of other segments of our society.

Since there is yet no quantification of "cost-effectiveness" with regard to health care in the national scene, it is not now possible to predict whether we will meet the standards or other measuring criteria. However, I am certain that the survival of our system will depend on those standards when they are made known. I therefore ask every member of the Navy Medical Department at every level and degree of responsibility, to wage a personal, as well as an organizational campaign to reduce the cost of Navy health care wherever and whenever feasible, without reducing the quality of health care. The critical nature of this challenge behooves each of us in a leadership position to establish the means and create the environment for encouraging cost reductions so that when national standards are established, Navy health care will meet the test of cost-effectiveness.

How skillful we are in our leadership, how wisely we shape our goals, how ably we set forth our purposes and achieve cost-effective health care — these things are the essence of the Navy Medical Department's future, and will spell the difference between our demise and our survival.



Navy Medicine in Wartime

Throughout its 103-year history, the Navy Medical Corps has periodically been called upon to support the Nation's armed forces in battle. Navy medical personnel have responded to the challenge of practicing medicine, under hazardous conditions and with limited resources; as members of a select professional body, collectively, they have acquired invaluable experience in providing emergency medical care. By the time of the Vietnam conflict, Navy medicine was able to offer the most sophisticated system of life-saving medical care ever provided in combat, or for that matter, ever provided in any large-scale critical emergency.

Although the techniques of delivering medical treatment have been refined and remarkably advanced from armed conflict to conflict, there are other aspects of wartime medicine that have changed very little. Navy hospital corpsmen still valiantly attend wounded men in the field, and at sea. The injured are still transported to tent (or MUST) hospitals for immediate care, or to hospital ships and support activities for definitive care. Life-saving surgery is still performed as soon as possible, with a progressive decline in the average time consumed between injury and definitive treatment.

This pictorial review provides but a brief glimpse of the evolving state of the art which Navy Medicine has retested and refined with each recurring military crisis.

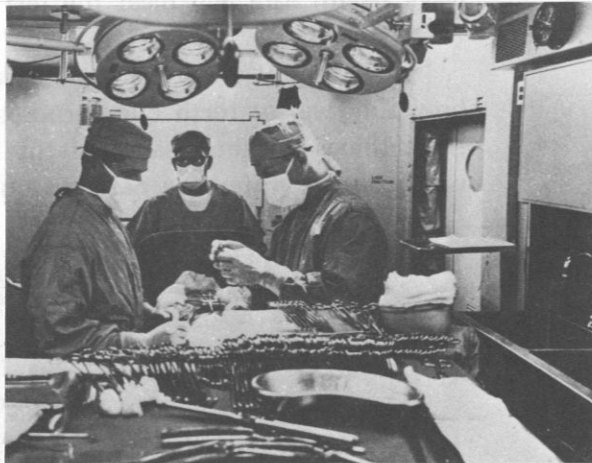
Wartime Surgery

WWII



A young surgeon and his assistants concentrate on saving a wounded man's life during an emergency operation in WWII.

VIETNAM



Twenty years later, surgeons save the life of a military man wounded in another conflict — Vietnam.

Tent Hospitals

WWI



This triage hospital, used in France during WWI, is formed of ruins and tentage. Here the smaller ambulances (Fords) transferred their wounded into larger ambulances (GMCs).

WWII



During WWII, an American hospital unit sets up its tent among the ancient Greek ruins at Paestum following landings at Salerno, Italy.

VIETNAM



Surrounded by sandbags, a tent hospital provides medical care for American forces during conflict in Vietnam.

Medical Care in the Field

WWI



Hospital corpsmen in WWI attend the injured in the field.

WWII



During WWII, an injured Marine receives blood plasma on the beach of Iwo Jima, while the battle for the island rages just a few hundred yards away.

VIETNAM



While on maneuvers, a young hospital corpsman treats the water-soaked foot of a Marine in Vietnam, 20 miles south of Da Nang.

Emergency Care

WWII



During WWII, stretchers serve as operating tables while surgeons care for wounded men in tent hospitals.

VIETNAM



In Vietnam, after evaluation in triage, stretcher bearers rush a patient to the X-ray room for an emergency study.

NAVY MEDICINE'S YOUNGER GENERATION

Women physicians on active duty in the Navy are still comparatively rare. But two earned a special place in Navy history last December by becoming the first female physicians to graduate from the Naval Aerospace Medical Institute at Pensacola, Fla., receiving the gold wings of the Navy flight surgeon. Along with 21 other Navy physicians, LT Jane O. McWilliams and LT Victoria M. Voge completed six months of advanced training in aerospace medicine subjects, with emphasis on aviation

physiology, cardiology, neuropsychiatry, otorhinolaryngology, ophthalmology, dermatology, and aviation dentistry. Their academic studies were supplemented by clinical work and survival training as well as several weeks of flight training.

The two physicians are now on the job keeping Navy and Marine flight crews flying safely and effectively. LT McWilliams is flight surgeon for visiting patrol squadrons at Keflavik, Iceland; LT Voge is



FLIGHT SURGEONS.—LT Jane O. McWilliams, MC, USN (left), and LT Victoria M. Voge, MC, USN (right) are the Navy's first female flight surgeons.

involved in medical research at the Naval Air Development Center, Warminster, Pa.

These women are typical of growing numbers of young professionals who are breaking new ground in Navy medicine. Today's Navy offers its people wider fields than ever before in which to test their mettle; Navy medicine in particular offers responsibility and variety far beyond what could be expected so early in a civilian medical career. The youth of the Navy Medical Service have responded to the opportunities with enthusiasm and imagination.

For example, the Naval Aerospace Medical Institute chalked up another first when LTJG Harry P. Hoffman became the first medical student to attend the Institute while completing part of his senior-year studies in the specialty of aerospace medicine. A senior at Hahnemann Medical School in Philadelphia, LTJG Hoffman is participating in the Navy's 1965 Scholarship Program.



EMERGENCY CARE.—LT Bruce D. Janiak, MC, USN demonstrates a resuscitation technique for emergency room technicians at Naval Hospital Pensacola, Fla.



CORPSMEN EARN DEGREES.—CAPT M.J. Valaske, MC, USN (far left), Clinical Course Director of the Medical Laboratory Technique School, Naval Medical Training Institute, Bethesda, and Dr. T.M. Peery (far right), from The George Washington University Medical Center, congratulate the first medical laboratory technicians to earn their degrees through a Tech School-University affiliated program. The deserving corpsmen are (left to right): HM3 M.A. Schusteric, HM2 D.R. Serrano, HM3 C.M. McCormick (kneeling), HM3 N.L. Purdin, and HM3 D.W. Burrows.

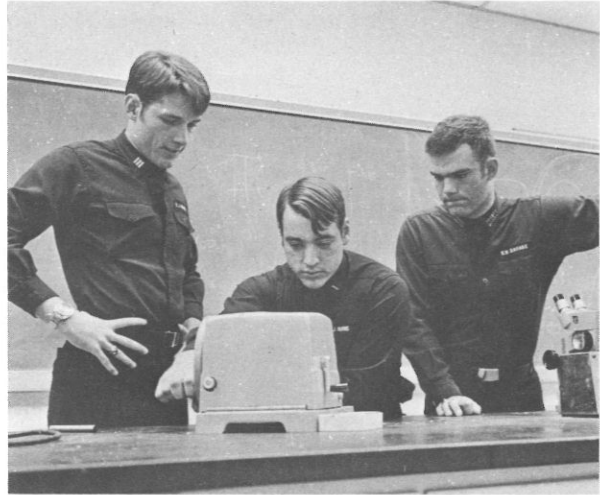
LTJG Hoffman has good reason for his interest in aerospace medicine. He has logged over 1200 hours of flight time, and has piloted aircraft on two combat tours with Attack Squadron 97 aboard USS *Constellation*. LTJG Hoffman's unique venture may lead other medical students to seek instruction in aerospace medicine while completing their didactic training in medical school. Such students would then be prime candidates for the complete flight surgeon course and ultimate assignment to aviation units.

Meanwhile, LT Bruce D. Janiak is enhancing resources at Pensacola Naval Hospital as a leader in the delivery of emergency medical care. Dr. Janiak, the Nation's first graduate of a residency program in emergency medicine, brings his extensive training in coronary care, acute psychiatric problems, orthopedics, neurology, gynecology, and disaster control and planning to his work as Chief of Emergency Services at Pensacola. The young physician stresses the importance of properly equipping and preparing emergency rooms, and providing quick, expert care for the acutely ill or injured patient. He feels there is no substitute for actually getting into the emergency room and doing the job. "You can read about pushing down 60 times a minute on a chest to get the circulation going," he says, "But if you haven't done it, you have no concept of what it actually feels like."

LT Janiak received his training in Cincinnati General Hospital's residency program in emergency medicine. At Pensacola he trains Family Practice residents and emergency room technicians in the techniques of the specialty.

Medical education and training in the Navy is becoming increasingly innovative and progressive. In January, five Navy hospital corpsmen became the first medical laboratory technicians to earn an Associate of Science degree in medical laboratory technique through their training at the Navy Medical Laboratory Technician School, Naval Medical Training Institute (NMTI), Bethesda, Md. HM3 Dale W. Burrows, HM3 Craig M. McCormick, HM3 Nicholas L. Purdin, HM2 Domidor R. Serrano, and HM3 Michael A. Schusteric, November graduates of NMTI, found that The George Washington University in Washington, DC, would grant them 49 hours of credit for their work at the School. The men earned an additional 12 credit hours in required courses through previous college work, and other educational sources. Another 86 students are now following in their footsteps, working at NMTI toward a degree under The GWU-affiliated program.

Another "first" for Navy medicine occurred recently when Midshipmen Rodney W. Savage, Michael J. Bosse, and James J. Burns became the first participants in the



FUTURE PHYSICIANS.—Michael Bosse (left), James Burns, and Rodney Savage (right) are the first midshipmen to be accepted to medical school under the Naval Academy's new premedical program.

Naval Academy's new premedical program to be accepted to medical school. The midshipmen are among 15 members of the Class of 1974 who will be the first to graduate with a major in bioscience. Only two percent of each class may take the bioscience major (instituted in 1971), and those who do must maintain high academic averages. Midshipmen who are accepted may go on to a civilian medical school after they graduate from Annapolis. They retain their military rank while in medical school, and serve on active duty in the Navy Medical Corps after graduation.

"I think the program has given me a good background for medical school," commented Midshipman Burns, who has been accepted at Milton Hershey School of Medicine in Hershey, Pa. "Once I get into the Navy as a doctor, there is a wide range of available specialties. I am interested in underwater medicine."

Other first classmen in the bioscience program expect to receive medical school acceptance in the coming months. And the supply looks good for the future. In the Class of 1975, there are 16 bioscience majors; in the Class of 1976, there are 22.

A number of information programs have been established at Navy medical facilities in order to acquaint more young students with the unique challenges and rewards of a career in the Navy Medical Department. Last November, for example, 25 students from St. Louis University School of Medicine were flown to Naval Hospital Charleston, S.C., to tour the facility and see Navy medicine in action. Nineteen of the medical students were already members of the Ensign-1975 program; the other six were either applicants who had not

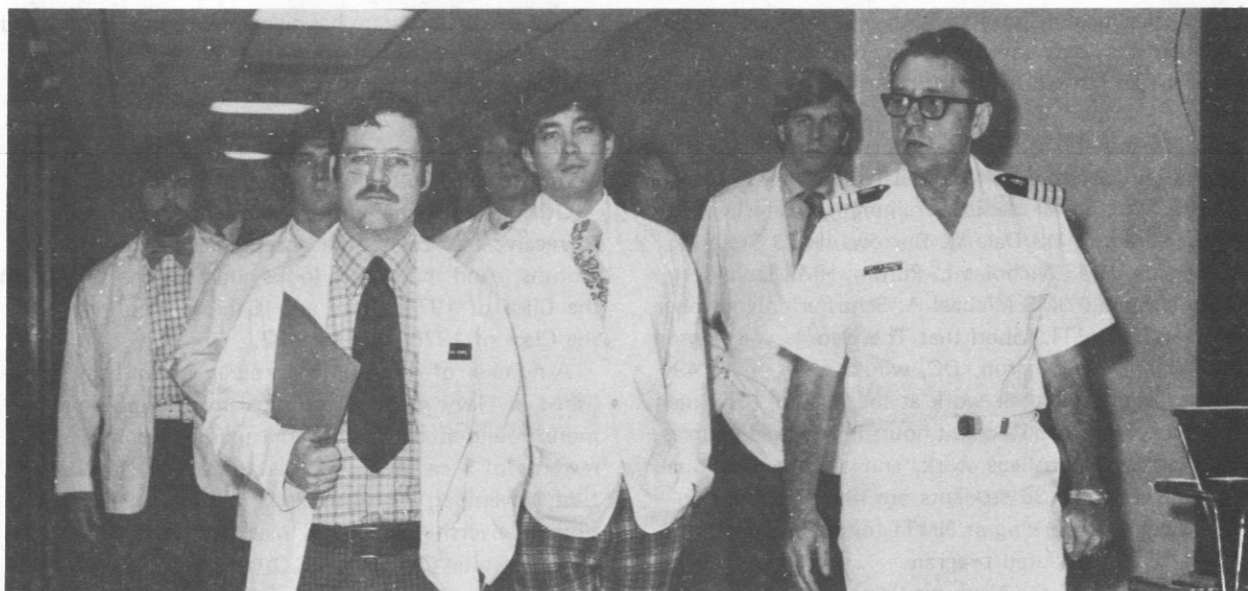


SOUTHERN HOSPITALITY.—Commanding Officer CAPT Walter Lonergan, MC, USN welcomes students from St. Louis University School of Medicine to Naval Hospital Charleston, S.C. The medical students spent three days observing Navy medicine in action.

yet been commissioned, or prospects with a serious interest in the program. During their three-day visit to the hospital, the medical students were guests of honor at a cocktail party and a military personnel inspection. They attended a medical-surgical conference and were briefed on aviation, submarine, and shipboard medicine. A highlight of the trip was a tour of a nuclear submarine at the Charleston Naval Weapons Facility.

Navy-sponsored medical students at the University of Miami Medical School hold an annual "Navy Day" to tell their classmates about Navy medicine. On such occasions, one of the school's offices is impressively decorated with flags, banners, posters, and photographs. Out of their own interest and spare time, this dynamic group arranged an unusually informative exhibit indicating the available internship and residency-training programs offered at various naval hospitals. The number of Navy-affiliated students has grown significantly, reflecting the tangible benefits of such enthusiasm at the University of Miami Medical School. Recruiting literature is also made available. Last year, VADM Donald L. Custis, MC, USN, the Navy Surgeon General was on hand to share the coffee and cake, and to talk with the students.

Through its Domestic Action Program, Naval Hospital Oakland, Calif., has participated in one of the most beneficial innovations in high-school vocational counseling. The hospital helps support the "Career Clusters Program" at Oakland's McClymonds High



GRAND ROUNDS.—CAPT C. Bramlett, MC, USN (far right), Deputy Director of the Naval Regional Medical Center at Charleston, S.C., escorts St. Louis University School of Medicine students on a tour of the facility. Twenty-five students participated in the three-day visit.



NAVY DAY.—Sharing pleasantries on Navy Day at the University of Miami Medical School are, from left to right: ENS Walter Mostek; LTJG Bill Hardy; VADM D.L. Custis, MC, USN, the Navy Surgeon General; and ENS John Koval.

School. The program is designed to reduce the drop-out rate, and to increase educational aspirations and motivations; it acquaints students with various occupations and gives them scholastic credit for their participation.

Students interested in the health-care professions are given three tours through Oakland Naval Hospital. First the students learn about the various health careers involved in a typical patient-care unit: Food Service, rehabilitative therapy, and clinical investigation. Later they tour supportive services such as health-care administration, the clinical laboratory, and the pharmacy. On their third and final visit, the class is acquainted with existing career opportunities in public health, dentistry, and surgery. In their junior and senior years the students can obtain credit for paid work in the health-care field.

This program is the first organized high-school career curriculum of its kind in the Nation. The participation of Oakland Naval Hospital gives the students a close look at Navy medicine, and may influence some of them to choose a military medical career.

William Barton, the first Chief of the Bureau of Medicine and Surgery, envisioned a Navy Medical Department staffed with people of "exceptional character and habits and good education, either by the usual academic opportunities or other successful exertions." The able, articulate, and adventurous younger generation of Navy medicine seems tailor-made to his specifications.

Whether they be pioneers charting a course through hitherto undeveloped professional areas, or traditionalists that breathe energy and vigor into established medical-career patterns, the Navy recognizes its medical neophytes as a highly prized asset. From today's younger generation will emerge tomorrow's leaders.



MIAMI RECRUIT.—VADM D.L. Custis, MC, USN (left), the Navy Surgeon General administers the oath of office to Walter Mostek on Navy Day at the University of Miami Medical School. CAPT Wendell Johnson, MC, USN (right) assists.



CAREER PROGRAM.—Navy physical therapist LT L.B. Hartung, MSC, USNR guides high school students in a tour of Oakland Naval Hospital's Physical Therapy Department. Students can earn high school credit while they learn about health-care careers.

Navy Physician Attitudes on the Proper Utilization of Physician's Assistants*

By LTJG Kenneth D. Gibson, MSC, USN**

LTJG John E. Montgomery, MSC, USNR†

and

Carole J. Shafer††

During the past few years, increasing costs, greater demands for medical care, and decreasing numbers of primary-care physicians have led military and civilian communities to focus attention on the use of physician's assistants as deliverers of health services. Within the Navy, the end of the doctor draft and cutbacks in military spending have further aggravated the health-care crisis. The Navy Medical Department is faced with an ever increasing challenge to optimally allocate medical manpower and financial resources, in order to meet the demand for medical care expressed by DOD beneficiaries at Medical Department facilities. The recently

developed Navy Physician's Assistant Warrant-Officer Program is one element of a concerted approach to meeting this challenge.

The physician's assistant (PA) in the Navy is viewed as an extension of the physician, working under physician supervision, and expanding the physician's capacity to provide care. The following description of the PA's role appears in a recent BUPERS notice:

"As a skilled health professional, the Navy physician's assistant will perform certain tasks formerly undertaken only by a physician. These tasks will be those delegated to the physician's assistant by the physician supervisor who remains responsible for all actions taken by the assistant. Principal duties will be primary patient contact to obtain medical histories and perform physical examinations, order appropriate diagnostic studies, interpret and record these data, and prescribe limited therapy."¹

*The above paper summarizes investigation conducted by LTJG Gibson as a student at the Naval School of Health Care Administration (NSHCA), NNMC, Bethesda, Md., previously reported in his paper, "A Survey of Navy Physician Attitudes Toward the Use of the Physician Assistant."

**LTJG Gibson is now a staff member of the Naval Dispensary in Glynnco, Ga.

†LTJG Montgomery, Research Associate at NSHCA, has added further analysis and interpretation of data in preparing LTJG Gibson's paper for this publication.

††Carole Shafer, Research Assistant at NSHCA, contributed additional data and analysis.

The opinions expressed herein are those of the authors and should not be construed as reflecting the views of the Bureau of Medicine and Surgery, the Navy Department, or the naval service at large.

1. Bureau of Naval Personnel: BUPERS Notice 1120. U.S. Department of the Navy, Washington DC, 10 Sep 1973.

In the spring of 1972 a memorandum of agreement was signed by the Bureau of Medicine and Surgery, and The George Washington University (GWU), establishing a program to train physician's assistants for the Navy. The course of study leads toward a Bachelor of Science degree in Allied Health, and includes all the academic, preclinical and clinical studies considered necessary to prepare a physician's assistant for his role in the Navy's health-care system. Engineered by the Naval Medical Training Institute (NMTI), the course currently consists of a 12-month period of didactic training, followed by a 12-month clinical apprenticeship at a naval hospital. Fifteen Navy hospital corpsmen began The GWU-affiliated program in the fall of 1972. Arrangements for a similar course of instruction have since been made with the U.S. Air Force School of Health Care Science, in Wichita Falls, Tex. The number of corpsmen now in training totals 51.

Although the role of the PA in Navy medicine appears to be theoretically sound, the success of the PA program will, in large measure depend upon the acceptance of this new health-care professional by his patients, and by the Navy physician. With only a handful of prototypes presently functioning in the field, forecasts of PA acceptance remain speculative. The purpose of this study is to examine the potential acceptance of the PA by the Navy physician. Will the doctor delegate a sufficient number of his current tasks to the physician's assistant, to allow the PA to function at a level of direct patient care commensurate with the extent of PA training and warrant officer's pay? What types of physicians will delegate which tasks? Will physicians resist the use of physician's assistants, and if so, where?

Civilian Study

This particular study of Navy physician attitudes towards the proper use of physician's assistants was patterned after a similar study conducted by B.L. Borland, F.E. Williams and D. Taylor,² involving 637 civilian physicians living in the 27-county area of the Susquehanna Valley Regional Medical Program (SVRMP). In that study, a self-coded questionnaire was used to gather data. The following major findings emerged:

1. A number of clinically related activities were regarded by a majority of physicians as appropriate duties for a physician's assistant.

2. Activities involving the formulation of a diagnosis or prescription for a course of treatment were considered least appropriate for the trained assistant. Activities of a more routine nature were considered most appropriate.

3. In general, physician specialists were most likely to select activities related to their own specialties as the most appropriate functions of a trained assistant.

4. Regardless of the specialty, type of medical practice or need for physicians in their respective communities, most physicians indicated that it would be practical for them to employ a trained physician's assistant.

Hypotheses

On the basis of the SVRMP study, other PA-related literature, and a subjective assessment of relationships among medical department personnel (particularly the physician-corpsman relationship), the following hypotheses concerning Navy physician acceptance of PAs were developed:

1. The Navy physician will accept the physician's assistant.

2. Navy physicians will delegate limited decision-making power.

3. Younger physicians (38 years of age or less) will more readily accept physician's assistants than will older physicians.

4. The more closely a task is associated with a particular medical specialty, the more likely it will be that such specialists would be willing to delegate the task to a physician's assistant.

Questionnaire

In order to test these hypotheses, a questionnaire, similar to the one used in the SVRMP study was constructed. The questionnaire listed possible duties of a physician's assistant, and the respondents were asked to indicate the appropriateness of a given task for a PA by checking column headings marked "yes," "no," or "do not know." In addition, a limited amount of personal data was solicited from each respondent, in order to examine the variations in results with respect to medical specialty, age, and rank. Twelve possible functions of a physician's assistant were listed on the questionnaire as follows:

1. Take detailed patient histories.
2. Perform preliminary physical exams.
3. Provide patient education.
4. Provide patient-care services such as cast

2. Borland B, Williams F and Taylor D: A survey of attitudes of physicians on proper use of physician's assistants. Health Serv Rep 87:467-472, May 1972.

application and removal, and changing of dressings.

5. Perform routine prenatal checkups.

6. Conduct well-baby checkups.

7. Perform required emergency-room procedures, to support vital functions until a doctor arrives.

8. Perform routine patient work-ups, and explain diagnostic procedures for hospitalized patients.

9. Monitor health status of chronically ill or post-operative patients.

10. Identify and order appropriate laboratory and radiological studies.

11. Collect and interpret results of laboratory and radiological studies.

12. Prescribe appropriate therapeutic regimen, under a physician's supervision.

These particular duties were selected to be consistent with the objectives of the Navy's PA training program. The questionnaire was pretested, using a group of 148 staff physicians at the Naval Hospital Bethesda, Md., in order that response difficulties, and technical problems associated with mailing and processing the returns might be identified. The pretest, which had a 61% response rate, did not indicate any need for change in the questionnaire or survey procedure.

Survey Sample Population

The survey was conducted by mailing questionnaires to 998 Navy physicians, all on active duty. (This represents nearly one-quarter of the physicians on active

TABLE 1

Distribution of questionnaire respondents by physician specialty, number, and percent of sample

Specialty	Number of Respondents	Percent of Sample
Orthopedics	39	6%
Internal Medicine	126	21
Psychiatry	31	5
Radiology	10	3
OB-GYN	53	9
Pediatrics	53	9
Surgery	50	8
General Medicine	107	17
Other	127	21
Not Ascertained	6	1
Total	612	100%

TABLE 2

Distribution of questionnaire respondents by military rank, number, and percent of sample

Rank	Number of Respondents	Percent
LT	244	40%
LCDR	236	38
CDR	68	11
CAPT	61	10
Not Ascertained	4	1
Total	612	100%

duty in the Navy.) Without regard for specialty, age or rank, the names of the physicians were selected at random from an alphabetical listing maintained by the Chief, Bureau of Medicine and Surgery. The mailing envelopes were preaddressed by BUMED, and mailing commenced on 10 April 1973. Close to 50% of the questionnaires had been completed and returned within one month. The last of 612 completed questionnaires was received on 31 Aug 1973; 61% of the original mailing had been returned.

The distribution of respondents by medical specialty is shown in Table 1. Included in the "other" category are members of various specialty groups such as neurology, rheumatology, cardiology, and ophthalmology, wherein the total number of respondents did not justify separate listings.

As indicated in Table 2, the respondents proved to represent a good cross section of the rank structure.

Eighty-five percent of the respondents were 38 years old, or less; 15% were over 38 years of age.

Results of the Study

Results of the survey, by specialty group are summarized in Tables 3 and 4. Table 3 reveals the percent of positive responses for each PA task, by specialty. Table 4 displays the negative responses. The two tables do not add up to 100% for all categories of response, because of "do not know" answers. Responses did not vary significantly with respect to rank or age. (Verified by the chi-square test at the 0.05 level of significance.) The results, in general, indicate a high level of Navy physician acceptance of the physician's-assistant role in Navy medicine, as was anticipated on the basis of the SVRMP study. In the case of the Navy Medical Department, this high acceptance rate may also be viewed as a favorable reflection on the current role and

performance of hospital corpsmen, who, to varying degrees, have historically filled the physician's-assistant role in the Navy. Familiar with the capabilities and competency of hospital corpsmen who have only limited formal training, it is not at all surprising that Navy physicians would be willing to delegate medical-care tasks to an assistant with a greater degree of training.

It was only in the case of collecting and interpreting data from laboratory and radiologic studies that less than 50% of the physicians surveyed were willing to delegate task performance to a physician's assistant. As expected, Navy physicians appear to be more reluctant to delegate tasks involving a significant degree of professional judgment than tasks of a less judgmental nature, except in the cases of necessary emergency intervention. Nearly 80% of the physicians surveyed were willing to delegate detailed history taking. More than 80% of the physician respondents indicated that they would delegate: performance of preliminary physical exams, provision of patient education, application and removal of casts, and changing of dressings. Only 50-70% were willing to delegate: routine prenatal and well-baby checkups, explaining and ordering diagnostic studies, monitoring of chronically ill or postoperative patients, and prescribing therapeutic regimens. In the absence of a physician, intervention by a PA was

considered acceptable by over 90% of the physicians polled, while interpretation of diagnostic study results, the function that probably demands the greatest degree of professional judgment, was considered appropriate by only 27% of Navy physicians.

This reluctance to delegate judgmental tasks may again be attributed to the physician-corpsman relationship. The Navy physician, having a fairly well established pattern of work delegation to his present non-nurse assistant, may find it difficult to upgrade the degree of delegation to similar personnel, despite the increased training received by the physician's assistant. The delegation of medical-care activities to hospital corpsmen, at least in the current naval-hospital setting, is largely limited to non-judgmental areas of patient care. The extent of delegation may also vary with the degree of trust that the physician may place in the capabilities of a specific corpsman. Similar variations in acceptable degrees of delegation are anticipated in the physician-physician's assistant relationship. The doctor will only delegate tasks commensurate with the proven capabilities of his assistant, regardless of the assistant's level of training or potential competency. The fact that the "do not know" responses appear to be more prevalent for the intermediate or high-judgmental-level activities tends to support this supposition.

TABLE 3
Possible duties of physician's assistants, percent of *positive* responses by physician specialty

Possible Duties*	Ortho- pedics	Internal Medicine	Psychi- atry	Radiol- ogy	OB-GYN	Pedi- atrics	Surgery	General Medicine	Other	Total
Patient Histories	69	70	77	75	91	76	86	79	80	78
Physical Exams	77	84	81	80	87	89	80	93	80	84
Patient Education	92	98	90	85	96	96	94	98	97	96
Cast Application	97	98	97	95	98	87	100	98	95	96
Prenatal Checkups	26	52	64	50	83	47	52	55	53	54
Well-baby Checkups	33	54	65	80	71	83	62	60	53	59
Emergency Intervention	85	93	97	95	96	92	88	94	91	92
Patient Work-ups	56	53	58	50	55	41	50	53	59	54
Health-Status Monitoring	74	69	81	55	72	68	70	55	60	65
Order Tests	51	53	55	40	47	38	56	53	47	50
Interpret Tests	26	30	36	10	26	19	28	29	23	26
Prescribe Treatment	54	60	68	55	70	70	64	64	52	61
Total Number of Respondents	39	126	31	20	53	53	50	107	127	606

*For a more detailed explanation of activities see text of article.

TABLE 4
Possible duties of physician's assistants, percent of *negative* responses by physician specialty

Possible Duties*	Ortho- pedics	Internal Medicine	Psychi- atry	Radiol- ogy	OB-GYN	Pedi- atrics	Surgery	General Medicine	Other	Total
Patient Histories	26	24	13	25	6	21	12	18	18	18
Physical Exams	18	18	13	15	11	11	18	4	17	13
Patient Education	3	2	3	15	2	4	6	0	2	3
Cast Application	3	0	0	0	2	4	0	2	2	1
Prenatal Checkups	33	28	19	30	13	32	20	32	25	26
Well-baby Checkups	26	25	19	40	19	15	16	24	23	23
Emergency Intervention	3	6	0	5	2	6	6	5	4	4
Patient Work-ups	36	35	29	45	39	42	40	34	30	35
Health-Status Monitoring	23	25	10	35	22	21	18	38	24	25
Order Tests	39	37	32	55	42	43	24	34	41	38
Interpret Tests	67	56	58	75	55	70	54	60	65	61
Prescribe Treatment	36	31	26	45	19	23	24	26	33	29
Total Number of Respondents	39	126	31	20	53	53	50	107	127	606

*For a more detailed explanation of activities see text of article.

"Do not know" answers account for more than 10% of responses in the areas of prenatal and well-baby checkups, patient work-ups, ordering and interpreting of tests, and prescribing treatment.

Application of the chi-square test to delegation of routine prenatal checkups, with the sample population separated into groups of obstetricians and non-obstetricians, indicated a highly significant correlation ($\alpha = .001$) between the OB-GYN specialty and physician willingness to delegate the performance of this task. That is to say, the obstetricians responding to the survey expressed a significantly more liberal attitude toward the delegation of routine prenatal checkups to PAs than did non-obstetricians. Similarly, pediatricians expressed a more liberal attitude toward the delegation of well-baby checkups to PAs than did non-pediatricians.

Other tests of association, between specialties and delegation of tasks closely associated with these specialties, included orthopedics, with cast application and dressing changing; and internal medicine, with detailed history-taking. In the former case no association was shown to exist, which is not surprising considering the universal acceptance of the delegation of this task; 96% of physicians surveyed, including 97% of the orthopedists, considered that this type of task could appropriately

be delegated to a PA. It is also possible that no association appeared because cast application and dressing changes were combined in a single item on the questionnaire, the latter task being generally associated with numerous specialties. In the case of internal medicine and history taking, a significant negative association was shown to exist (at the $\alpha = .05$ level). This apparent inconsistency can most likely be explained as a consequence of the unique importance attached to detailed history taking by the internist. Medical judgment is probably operative to a greater degree in the internist's history taking, than in that of the non-internist. Consistent with other results of this study, the internist would therefore be less likely to delegate this task to a PA than would his fellow non-internist. Still, it should be noted that 70% of the internists responding to the questionnaire did indicate a willingness to delegate history taking to a physician's assistant. (Provided they acquire timely, reliable answers to the right questions, after all, the majority of internists would probably not belabor the method of acquisition.)

Conclusions

The results of this survey tend to confirm the findings of the SVRMP study and, with one exception, the

hypotheses developed in the early part of this investigation. The one exception is that no relationship was found to exist between physician age, and attitude towards delegation of medical-care tasks to a physician's assistant.

The study indicates a high degree of Navy physician acceptance of the role of PAs. It supports the hypothesis that the more medical judgment involved in an activity, the more reluctant the physician will be to delegate its performance. The study further suggests that a physician of a particular specialty will be more likely to delegate a task closely associated with his specialty, than will a physician of another specialty. An exception to this rule may exist, in the case of tasks which

traditionally require a higher degree of judgment in a particular specialty or which are of paramount importance to a particular discipline.

Implicit in the general acceptance of the PA's role by Navy physicians, across a broad range of specialties, is the conclusion that the physician's assistant may have a viable role in a number of specialties, as well as in the general medical field. The results of this study should be encouraging to those who view the PA as a major component of future health-care delivery in the Navy. Whether these results will be validated by actual field experience is, of course, the more important question which remains to be answered. ☸

1973 OUTSTANDING RESERVE DENTAL COMPANY NAMED

Naval Reserve Dental Company 6-3 of Charlotte, N.C., has received the Outstanding Naval Reserve Dental Company Award for 1973. The award was presented in October at the Naval Reserve Dental Symposium, held in conjunction with the annual session of the American Dental Association.

RADM R.W. Elliott, Jr., DC, USN, Chief of Dental Division, Bureau of Medicine and Surgery, presented the award to CDR James E. Graham, DC, USNR-R, Commanding Officer of Naval Reserve Dental Company 6-3, for outstanding performance, loyalty, and dedication to the proficiency and continued advancement of the Reserve Program of the Navy Dental Corps. In addition, a brass plate engraved with the name of the winning dental company and its commanding officer was mounted on the commemorative Naval Reserve Dental Company trophy located in the Dental Division of the Bureau of Medicine and Surgery.



DENTAL TROPHY.—This trophy is awarded each year to the Outstanding Dental Company in the U.S. Naval Reserve. The award was established in 1970 by the Chief of the Dental Division, Bureau of Medicine and Surgery.



OUTSTANDING RESERVISTS.—Naval Reserve Dental Company 6-3 of Charlotte, N.C., has won the 1973 Outstanding Naval Reserve Dental Company Award. Members of the company are: (seated, left to right) — CAPT Edward Austin, DC; CDR James E. Graham, DC (CO); CDR Joseph Porter, DC; CAPT Barry Miller, DC; (standing, left to right) — LT Robert Phillips, DC; CDR Norman Sawyer, MC; CDR Lackey Peeler, DC; LCDR John Kiser, DC; LT Joseph Stiner, DC; LCDR James Devereux, DC; LT Elliott Motley, DC; CDR John Reynolds, DC; LCDR Bruce Ketner, DC; CAPT James Radermacher, MSC, and; LCDR William Myers, DC. ☸

MEDICAL REGULATING

What It Is and How It Works

By CDR James E. De Witt, MSC, USN*

Military medical treatment facilities throughout the world are involved in the daily task of admitting and discharging patients. For the most part this involves direct admission and discharge situations; however, there are times when these facilities are confronted with the transfer type of admissions and discharges. The latter category includes those patients who must be transferred from an original admitting medical treatment facility because their care and treatment is beyond the capability of that medical treatment facility, or because extended or prolonged periods of care and treatment that can be better provided at a specialized medical treatment facility are required. Also included in the transfer category are large numbers of casualties evacuated from overseas to the continental United States because of limited hospital resources within theaters of operation. The medical regulating system effects decision making in the selection of patients who must be transferred to other medical treatment facilities, and the specific facilities to which they must go.

DEFINITION

Medical regulating can best be defined as a system which controls the movement of patients for hospital-

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The opinions or assertions contained in the above article are those of the author, and are not to be construed as official or necessarily reflecting the views of the Navy Department, or the naval service at large.

ization and treatment. This system is comprised of several layers, if you will, of medical regulating activities that interact for control and orderly movement of patients from point of injury or illness, to ultimate treatment destinations. It may involve any number of intra and/or inter-theater transfers, to effect the proper care and treatment of a given patient. The primary function of medical regulating is to determine the appropriate hospital designations for rendering the necessary care and treatment of each patient; it does not include the actual movement of the patient which is a responsibility of transportation agencies.

During wartime, medical regulating functions may be performed by any number of units within a theater of operations before a casualty reaches his ultimate hospital destination. The following example illustrates how the system works outside of a theater of operations, and during peacetime.

ILLUSTRATIVE CASE

"A seaman aboard a destroyer operating in the Pacific falls from the bridge and suffers multiple injuries, including a fracture of the cervical spine and intracranial injury. He receives prompt medical attention aboard the destroyer and is quickly evacuated to the nearest hospital, the U.S. Naval Hospital, Subic Bay, ROP.

"Upon arrival at Subic he is provided with further care and treatment, but it is determined early that capabilities do not exist at Subic for caring for the patient's specific injuries. The patient is reported by

Subic to the Pacific Command Joint Medical Regulating Office (PACOMJMRO) for 'urgent' movement to a medical treatment facility having the required professional capabilities. In reporting the case to PACOMJMRO, Subic includes all pertinent facts concerning the patient's condition and medical requirements. PACOMJMRO reviews the reported data and determines that the patient can receive the required treatment at Clark AFB Hospital, P.I. PACOMJMRO advises Subic of the destination hospital, and Subic arranges for the patient's evacuation to Clark.

"Following several days of treatment and care at Clark, the attending medical officer feels that further therapy in the case can best be accomplished in the continental United States. Clark again reports the case to PACOMJMRO which in turn reports the case to the Armed Services Medical Regulating Office (ASMRO) located in Washington, D.C. All pertinent facts concerning the patient's condition and medical requirements are again reported, and in addition, the location of the patient's primary next-of-kin is included. Based on this information, ASMRO selects a CONUS hospital which is nearest the patient's place of residence, and which has both the specialty capability and bed availability for handling the patient's medical needs; in this case, the Naval Hospital, Philadelphia, Pa., is chosen. Notified by ASMRO of the CONUS hospital designation, Clark arranges for the patient's evacuation to Philadelphia.

"Following the patient's arrival and several weeks of hospitalization at Philadelphia, it is determined that the patient will not be returned to duty and should be separated from the service by reason of physical disability. Physical disability proceedings are effected, and since the patient will require continued hospitalization subsequent to his separation from service, it is determined that he should be transferred to a Veterans Administration hospital. This decision is reported to ASMRO in the form of a request, setting forth all the pertinent facts concerning the patient's condition and medical needs, and the location of his family. ASMRO obtains a bed reservation in a Veterans Administration hospital which is nearest the patient's home, and which has the capability for handling the patient's care and treatment. The VA hospital designation is communicated by ASMRO to the Naval Hospital Philadelphia, which arranges for the patient's evacuation to the VA hospital in Castle Point, N.Y., where the patient will receive specialized care and treatment for his spinal cord injury."

COMPLEX OPERATION

Multiply the above case by the tens, hundreds, and even thousands from all over the world, and one can

better understand the complexities involved in operating an effective and efficient medical regulating system, which will achieve the ultimate good by placing the right patients in the right hospitals at the right time.

ASMRO is responsible for providing effective control over medical regulating, for the purpose of achieving efficient and economical utilization of military medical treatment facilities within the continental United States, particularly in terms of patient welfare and the best use of hospital bed availabilities. What is ASMRO? What does ASMRO do? What part does ASMRO play in the specialized treatment programs of the uniformed services? These questions are frequently voiced, both by medical and nonmedical groups of the uniformed services.

ASMRO is a joint agency of the Army, Navy, and Air Force, conceived originally as a wartime agency, but since, proven an essential element for the peacetime control of medical regulating. Three Medical Service Corps officers — one from each of the three military services — are assigned to ASMRO as medical service representatives of their respective Surgeons General. The assignment as Chief of the agency is rotated among the three services. In conjunction with other assigned enlisted military and civilian personnel, these three officers are responsible for the efficient operation of their agency in accordance with the instructions issued by the Department of Defense under the ASMRO charter.

Today, the primary mission of ASMRO is to regulate the flow of Armed Forces patients evacuated from overseas, and/or to be moved from one hospital to another within the continental United States. Additionally, ASMRO obtains Veterans Administration hospital designations for active duty members of the uniformed services who are being separated or retired from the service for disability, and for certain categories of members without disability who require further hospitalization or rehabilitation subsequent to their separation. ASMRO also provides hospital designations for retired members; dependents of active duty, retired, and deceased active duty and retired members; and other eligible civilians being returned from overseas via military medical channels. ASMRO does not, however, regulate the latter category of patients between hospitals within the continental United States.

To accomplish this mission ASMRO is faced with a task of considerable magnitude, requiring an intimate knowledge of the specialized treatment programs operated by the three military services, Public Health Service, and Veterans Administration, as well as a


reciprocal working relationship with transportation agencies on matters relating to the movement of the sick and injured. Many complexities attend the operation of an effective medical regulating system, and since its conception, three major considerations still prevail and are recognized by ASMRO as being the most important and essential elements. First and foremost, ASMRO must consider the type of injury or disease involved, and the medical specialty requirement for each patient. This includes any requirements for specialized services and/or surgical or nonsurgical procedures. Next, the selection of a uniformed service medical treatment facility, which has the specialty capability and bed space available, must be accomplished. Selection of an appropriate medical treatment facility involves any number of other considerations which must be satisfied, to ensure that only the highest standard of medical professional care is accorded, and that the psychological well-being of the patient is maintained. Every attempt is made to place a patient in a hospital of his parent service; however, in those cases where a patient is returning from overseas, hospitals of the other services are often-times used if the patient is thereby placed nearer his home, and if it is not expected that the patient will require disability separation proceedings. In the case of patients being regulated within CONUS: they are placed in the hospital nearest their duty station if expected to return to duty, and in the hospital nearest their home if not expected to return to duty. Other considerations in this area include the policies of the respective Surgeons General with regard to teaching and research programs, limited specialty capabilities, disability cases, etc. Finally, ASMRO must have an appreciation for certain transportation factors such as modes of travel, travel times, routes, etc., in order to determine approximate reporting times of patients.

REPORTING AND CODING SYSTEM

In order for ASMRO to effect timely movement of large numbers of patients and, at the same time, consider the individual needs of each patient, it was necessary to develop a system of reporting which would be comprehensive in substance, yet adaptable to conciseness in print in order to permit transmission by electrical or telephonic means. Out of this need evolved a medical coding system, developed by ASMRO and utilized today, in medical regulating throughout the Armed Forces. In brief, the coding system utilizes a series of alphabetical and numerical symbols which, when arranged in the proper sequence, provide ASMRO

with the full particulars on each patient awaiting a hospital designation. A properly coded message will serve to identify, for ASMRO: the patient's departmental status, sex, rank or grade, and; medical classification to include diagnosis and specialty, and litter or ambulatory requirements. Suffixing the code with the name of the patient's duty station will indicate that hospitalization is expected to be of short duration, with anticipated return to duty, and that assignment to a specialized medical treatment facility in the immediate area of the patient's duty station is preferred. In cases where prolonged periods of hospitalization or failure to return to duty are anticipated, the location of the patient's primary next-of-kin (city and state) is substituted for the duty station, whereupon ASMRO will endeavor to designate a specialized medical treatment facility nearest the patient's home. The purpose of the latter measure is to enhance the psychological well-being of the patient, as well as that of his family.

This system of coding is particularly effective when large groups of patients are involved, enabling the reporting agency to identify any number of patients on a single message with minimal expenditure of administrative effort and time, and more important, without compromise of detailed information that is required to determine the most appropriate specialized medical treatment facilities for each patient. To say the least, ASMRO's reporting system is both sophisticated and simple — sophisticated enough to ensure accurate movement of patients, and yet simple enough for application by minimally trained personnel at the medical treatment level. The system is also highly flexible. It can be expanded to accommodate any new requirements that may be necessary, such as: providing classification symbols for new medical subspecialties, and prefixing of patient's coding with patient's name, to facilitate follow-up on the movement of certain patients (as was initiated during the Vietnam era).

Because ASMRO is a joint agency, the success of the ASMRO mission is in large measure dependent upon complete coordination and cooperation with each of the services represented. Consequently, vital statistics continually flow into ASMRO from each service, specifying the medical specialty capabilities, and the status of allocated beds for ASMRO use in the respective medical treatment facilities. Close liaison is maintained at all times with the various transportation agencies, keeping ASMRO fully informed on changing routes, schedules, and frequencies. By funneling these data into a single focal point, the combined medical treatment facilities of the Army, Navy, and Air Force can be fully exploited to provide optimal professional care and treatment for our sick and wounded. 

Arthrography of the Knee Joint in Fleet Personnel

By CDR John S. Romine, MC, USNR*

Arthrographic studies of the knee joint have proven accurate, providing early diagnosis of meniscus tears, reducing unnecessary surgery while demonstrating cruciate ligament tears or residual meniscus fragments after previous surgery, without complications. Recent experience with arthroscopy has demonstrated its diagnostic efficiency; however, this procedure should be performed only under sterile operating room conditions, using general or regional block anesthesia.

Experienced orthopaedists, examining large numbers of knee problems, depend primarily upon the history and physical examination to diagnose surgical knee disorders. Without a clear history of locking and classical physical findings, surgical decisions are usually postponed until the knee has been examined several times.

Naval personnel assigned to fleet billets present a unique problem, often requiring evaluation and surgical decision at the time of a single outpatient visit. This study reviews the efficiency of arthrography, used as an outpatient office procedure in a fleet support activity.

MATERIAL

Between September 1967 and May 1970, a consecutive series of patients was examined, utilizing an arthrographic study of every knee that was suspected of having a surgical condition. A total series of over 100 studies was performed. This paper analyzes the findings and results only in the personnel referred to the

Orthopaedic Department, U.S. Naval Hospital Naples, Italy, from ships deployed with the Sixth U.S. Fleet. The group consisted of 59 patients. Each patient in this series was examined by the author; direct referral of patients to the X-Ray Department followed, where an arthrogram was performed and interpreted on the same day.* Forty-three patients were admitted for surgery. (See Table I)

TABLE I
Interpretation of Arthrograms (59 Patients)

Number of Cases	Diagnosis	Admitted For Surgery
10	Normal Arthrogram	No
1	Normal Arthrogram	Yes
4	Torn Medial Meniscus	No
2	Baker's Cyst	No
27	Torn Medial Meniscus	Yes
13	Torn Lateral Meniscus	Yes
2	Both Menisci Torn	Yes

TECHNIQUE

A scout-film study of the knee was performed, and the knee was prepped with a povidone-iodine solution which was then removed with alcohol.

If palpable effusion was present, all fluid was aspirated from the knee joint. The syringe was then removed, leaving the needle in place in the knee joint; another large syringe containing contrast material and air was then attached to the needle, effecting injection into the joint. The knee was then manipulated to thoroughly spread the contrast material, and a series of X-ray pictures was obtained.

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The opinions or assertions expressed in the above paper are those of the author, and are not to be construed as official, or reflecting the views of the Navy Department or the naval service at large.

*The cooperation and assistance of Sid J. Mauk, M.D., former Chief of Radiology, U.S. Naval Hospital, FPO New York 09521, is acknowledged.

Contrast materials suitable for arthrography include all water-soluble contrast preparations ordinarily used for intravenous renography. In addition, 20 to 30 cc of room air was injected simultaneously to distend the synovial space.

Using the X-ray technique determined by the scout-film study, a series of seven films were then exposed, using a table top vertical beam; starting with an AP view of the knee, additional views were obtained as the knee was rotated every 30 degrees with the medial aspect of the knee toward the film, ending with a PA view.

RESULTS

The 16 patients who underwent arthrography and were returned to their ships without surgery were lost to follow-up. Four of these patients were diagnosed as having a torn medial meniscus, and two other patients had a small Baker's cyst without evidence of torn meniscus. These diagnoses were recorded in the patients' health records, in case further treatment might be required in the future at another hospital.

Analysis of the 43 operated cases revealed the surgical findings and arthrographic diagnoses to be in agreement in 39 instances. (See Table II). The four exceptions are individually discussed below.

TABLE II
Correlation Between Arthrography and
Surgical Findings (43 Patients)

Number of Cases	Arthrogram	Surgical Finding
25	Torn medial meniscus	Same
12	Torn lateral meniscus	Same
2	Both menisci torn	Same
1	Torn medial meniscus	Normal Meniscus
1	Torn medial meniscus	Osteochondritic lesion in medial femoral condyle
1	Torn lateral meniscus	Normal meniscus
1	Normal arthrogram	Osteochondral fracture of patella

The patient with the false positive medial meniscus defect was a prisoner in a ship's brig, who appeared to be having severe knee pain. The arthrogram was interpreted to reveal blunting of the tip of the medial meniscus in its middle third. Surgical exploration of both sides of the knee was carried out, and no abnormalities

were found. The patient was unimproved following surgery.

The false positive lateral meniscus arthrogram resulted from interpretation of the popliteal tendon recess as a defect. This case occurred early in the series; several similar arthrograms were reviewed subsequently and analyzed conservatively.

A patient with an osteochondritic defect was explored and a flap of attached articular cartilage, misinterpreted as a torn medial meniscus on arthrography, was removed from the medial femoral condyle. The patient was improved postoperatively and was returned to duty within six weeks, thus justifying the surgical procedure even though the preoperative diagnosis was incorrect.

A patient who sustained a twisting knee injury presented with knee pain, effusion, and inability to flex the knee joint beyond 90 degrees. Despite a negative arthrogram the knee was explored, and a large defect in the patella resulting from osteochondral fracture was found. Sunset views of the patella were not routinely incorporated in our arthrographic technique, and were not obtained in this case.

DISCUSSION

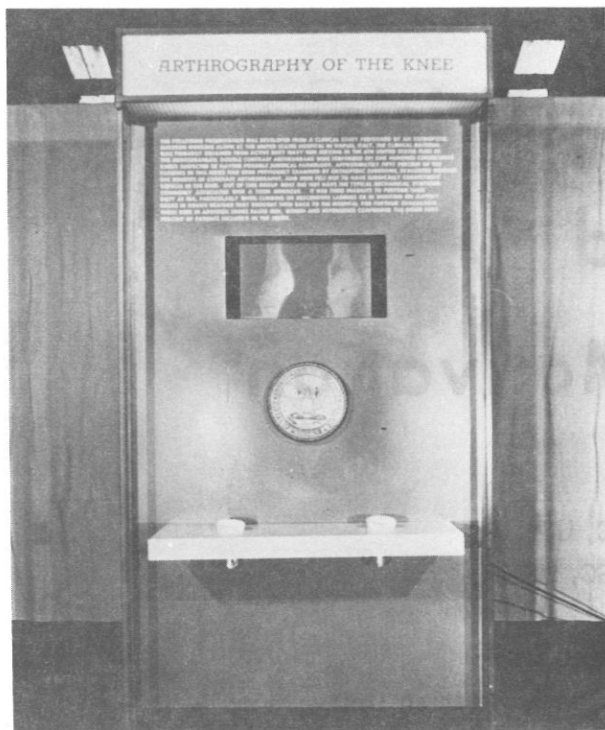
The technique herein described essentially provides single contrast arthrography. The air injected into the knee acts to inflate the joint, allowing better quality X-ray studies when there is synovial thickening. In order to implement the true double-contrast technique described by Freiburger, the X-ray tube should be directed horizontally, with a pocket of air surrounding the upper meniscus and the excess contrast material gravitating to the inferior portion of the joint.

Many of the smaller medical facilities do not have the radiologic equipment to perform sophisticated double-contrast techniques.

The procedure described here can be performed in any facility and in this series provided 90% diagnostic accuracy, comparing favorably with other published reports.

SUMMARY

Fifty-nine patients suspected of having surgical knee problems were examined in a fleet support activity, undergoing arthrography during an outpatient consultation. Forty-three patients were admitted and had surgical procedures performed. Surgical findings correlated with the arthrographic interpretation in 39 patients (90%).



A BUMED-sponsored exhibit entitled "Arthrography of the Knee," pictured above, was presented at past annual meetings of the American Academy of Orthopaedic Surgeons, International College of Surgeons, American College of Surgeons, and American Medical Association. The exhibit was based on the series of cases discussed in this paper.

The introduction to the exhibit states that approxi-

mately 50% of the patients in the series had previously been evaluated by orthopedic surgeons without benefit of contrast arthrography, and were felt not to have surgically correctable knee defects. Most did not present typical mechanical symptoms commonly associated with a torn meniscus. It was their inability to perform their duty at sea, particularly when climbing or descending ladders or in working on slippery decks in rough weather that brought them to medical attention. The other 50% of patients in the series included shore based men, women, and dependents.

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CAPT LEVY AWARDED ORDER OF THE FALCON

CAPT Jerome Levy, MC, USN, senior medical officer at the U.S. Naval Station Dispensary Keflavik, Iceland, and Iceland Defense Force Staff Surgeon, was recently awarded the Knight's Cross of the Order of the Falcon. The Knight's Cross is the fourth highest decoration of the Republic of Iceland.

CAPT Levy and three other Defense Force officers were recognized for their emergency assistance in coordinating activities of the Iceland Defense Force during the volcanic eruption in the Westman Islands, from 23 Jan until 15 Mar 1973.

CAPT Levy has been serving in Iceland since July 1972. — MAO, Station Dispensary, Naval Station, FPO NY 09571.



ORDER OF THE FALCON.—RADM Samuel M. Cooley, Jr., USN (left), Commander Iceland Defense Force, admires CAPT Jerome Levy's latest decoration — the Knight's Cross of the Order of the Falcon.

Psychiatric Crisis and Enlistment Motivation

By LT Darrel Edwards, MSC, USN,
LT Steven F. Bucky, MSC, USNR,
and
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The concept of an all-volunteer force has met with mixed reception by different sectors of the military and civilian establishments. A critical issue associated with change in an industrial setting is the concomitant change in effective performance within the affected system. Initial checks on the impact of the all-volunteer force on military service have attempted to assess possible changes in the enlisted input. Vitola and Valentine¹ examined two classes of enlistees into the Air Force: those who enlisted with draft pressure under the lottery system (draft-motivated), and those who enlisted without draft pressures (self-motivated). The self-motivated enlistee was characterized by less education and lower aptitude scores than the draft-motivated enlistee. Rhode, Delke, and Cook² found similar characteristics in the Navy.

Although a relationship between quality of input and effectiveness has been documented,³ an examination of performance of the all-volunteer enlistee has not been accomplished. Bucky, Edwards, and Berry⁴

found that draft-motivated Navy enlistees admitted to significantly more anxiety, depression and sleep-disturbance symptoms, and significantly fewer behavior-disorder symptoms than did self-motivated enlistees. This study investigated psychiatric ineffectiveness under an all-volunteer simulated structure: among draft-motivated, and self-motivated enlistees.

METHOD

Incoming recruits at the San Diego Naval Training Center were selected for investigation. Enlistees who joined the Navy in 1970 or 1971 with draft lottery numbers in the highest third were classified as self-motivated. High lottery numbers (e.g. 200) carried a lower chance of being drafted than low lottery numbers (e.g. 20). Those men who joined the Navy in 1970 or 1971 after receiving lottery numbers in the lowest third were selected as draft-motivated. There were 2070 men in the self-motivated group, and 5866 men in the draft-motivated group.

The psychiatric records for these two groups were examined. Two comparisons were made on the two samples: (a) incidence rates were compared, and (b) distributions of various diagnoses were examined.

This study was supported by the Bureau of Medicine and Surgery, Department of the Navy, under Research Unit No. MF51.524.002-5014DX5F.

The opinions expressed are those of the authors and are not to be construed as official, or necessarily reflecting the views or endorsement of the Department of the Navy.

RESULTS AND DISCUSSION

Incidence of Psychiatric Ineffectiveness

The self-motivated group had a 2.12 percent incidence rate, and the draft-motivated group had a 2.80 percent incidence rate. These rates are not statistically different. It appeared from the results that the expected case load for psychiatry and the subsequent ineffectiveness for enlistees under an all-volunteer system may not change. The all-volunteer force would not be, therefore, more costly to the system due to overall psychiatric casualty.

Distribution of Diagnoses

Four classes of diagnoses plus one "other" class were compared for men in each sample who became psychiatric casualties. The results are summarized in Table 1.

Table 1

A Distribution of Selected Diagnoses for Inpatient Psychiatric Cases Among Self-motivated and Draft-motivated Enlistees

Diagnosis	Self-motivated ^a (No. = 56)	Draft-motivated ^a (No. = 127)
Psychosis	11	5
Neurosis	30	17
Character Disorder	41	50
Drug-related	7	14
Other (transient, specific, organic, psycho- physiological)	11	14

^aFigures are expressed in terms of percentage of the psychiatric cases for each group.

From Table 1 it can be seen that the men in the self-motivated group who became psychiatric cases received psychotic or neurotic diagnoses almost twice as often as those in the draft-motivated group, but they were diagnosed as having drug-related problems half as often as the draft-motivated group. Characterological problems and transient, specific, organic, or psychophysical problems were relatively stable.

It would appear that the all-volunteer force (proposed to be simulated by the self-motivated sample) may provide fewer drug cases and somewhat fewer characterological problems, in general. On the other hand, more instances of neurosis and psychosis may occur. Under self-motivated (volunteer) conditions, those men who may have problems with military structure and rules (men diagnosed as having characterological or drug problems) could be expected to stay away from the service.

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A FIRST FOR NORFOLK.—RADM Vernon L. Anderson, DC, USN (left), Director/Commanding Officer, Naval Regional Dental Center, Norfolk, Va., swears in LT Richard C. Miller, DC, USNR (right) upon his augmentation into the Regular Navy. LT Miller is attached to the Yorktown Branch Dental Facility, and is the first dental officer to augment at the newly established Naval Regional Dental Center.

HOSPITAL FLIGHT SURGEON

With the designation of a flight surgeon at many naval hospitals, confusion has been generated. The flight surgeon reviews (not necessarily performs) flight physicals. Face-to-face interview between flight surgeon and aviator is essential. Hospital flight surgeons are consultants for other aviation personnel. A Bill is presently before Congress for reinstatement of flight pay.

MERCURY SAFETY STANDARDS

Use of mercury in combination with other metals to form amalgam may contribute to contamination of dental operatories by free mercury; mercury contamination may also result from use of dental air turbines.

To ensure safety of all Navy personnel, The Navy Industrial Environmental Health Center (NIEHC), Cincinnati, Ohio, has conducted a study of atmospheric levels of mercury, as well as mercury levels in blood and urine of exposed individuals (and controls) in 10 or more dental facilities. The resulting data fail to demonstrate direct correlation among air, urine and blood studies, but they do provide a valuable overview of mercury exposure.

Several air samples were reported in excess of .15 mg/mercury per cubic meter, the calculated permissible short-term excursion value for mercury set by the American Conference of Governmental Industrial Hygienists.

Look for implementation of certain controls as a result of recommendations based on the study, with resurvey by NIEHC of participating dental facilities in Norfolk area following implementation of recommended changes . . . Effective controls to be extended to other dental facilities.

NEW ASSISTANT SEC DEF (H & E)

Appointment of new Assistant Secretary of Defense (Health & Environment) has been confirmed . . . The Honorable James R. Cowan, M.D.

CNO BRIEFING

Effects of doctor draft loss and loss of the Berry Plan on the Navy Medical Corps were the subject of recent CNO briefing by BUMED Professional Division GMO assignments, Berry Plan input, and physician assignments in graduate and nongraduate training hospitals, were addressed and projected for immediate and future years. Need for Physician's Assistant and Nurse Clinician Programs noted . . . also for revision of dispensary priorities in terms of selected closures, staffing with independent-duty and/or civilian physicians only, and limitations on use to active duty and their dependents, on a space-available basis.

MEDICAL OFFICER RECRUITING

Need to develop criteria (probably trimilitary service) for appropriate standards and qualifications of foreign medical-school graduates (FMGs) who seek commission. The largest percentage of those responding to Medical Department recruiting efforts are FMGs.

The Council on Medical Education and the Executive Council of American Medical Colleges recommended to the Education Council for Foreign Medical Graduates (ECFMG) that "FMGs have medical knowledge at least comparable with the minimum expected of graduates of approved medical schools in the U.S. and Canada." Possible requirement might be successful completion of FLEX (Federation of State Medical Boards Licensure Examination), in considering FMG applicants.

FMGs will undergo rigorous screening and evaluation before entering the Navy Medical Corps.

ST. ALBANS TO THE VA

While efforts will be made to provide outpatient services to local dependents of active duty and retired personnel through FY-74, preliminary plans for VA takeover of the NAVAL HOSPITAL ST. ALBANS, NY, are proceeding. Representatives of the Veterans Administration, Navy, OEA, and GSA are developing the preliminary plans for the VA takeover.

FY-76 MILCON PROGRAM

The current FY-76 Military Construction (MILCON) Program is still under revision . . . additions and deletions from the list still being made as Budget cycle moves forward.

Existing deficiency in funds for outfitting new Naval Hospital at Camp Pendleton could delay or detract from projected occupancy in Jul 1974.

DENTAL RECRUITING CONFERENCE

District dental officers and their administrative assistants (from Districts THREE, SIX, EIGHT, NINE, ELEVEN, and THIRTEEN) attended conference at the Naval Graduate Dental School, Bethesda, Md., 21-22 Feb 1974 . . . to familiarize attendees with current recruiting policies and practices . . . emphasis on present and future Dental Reserve Program Recruiting.

Anticipated shortfalls of dental officers in FY-75, 76, and 77 must be balanced by input from direct appointments and the Early Commissioning 19251 Program, secondarily from the HR2 Program (Armed Forces Health Professions Scholarship Program).

The Early Commissioning Program is the greatest source of information concerning Navy Dentistry for dental students, and the prime source of accession for the Navy Dental Corps.

ARTHROPOD CONTROL

Use of concentrated pyrethrum aerosols now offers quick, effective, and safe control of cockroaches in ships and other naval activities.

REPELLENT IMPREGNATION

The Naval Field Medical Research Lab at Camp Lejeune, NC, has demonstrated an interesting technique of impregnating wide mesh netting with diethyltoluamide (deet) repellent . . . provides excellent protection against mosquitoes and other biting insects. Impregnated material can be made into jackets, bed- and tent-netting.

An Extra Large Processing Flask

By CAPT David N. Firtell, DC, USN,
Chief, Dental Service, and
Dept. of Dentistry, Clinical Investigation Center,
Naval Hospital, San Diego, California 92134.

Having been involved with maxillofacial prosthetics over the past ten years, the author has perceived an increasing need for an extra large processing flask. In the fabrication of odd-shaped oral prostheses, cranial plates, extraoral prostheses, and facial prostheses, many substitutes for a flask have been tried. These substitutes —

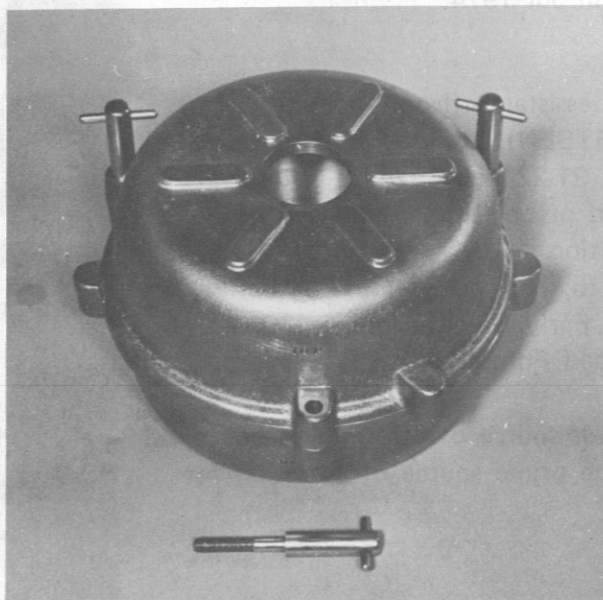


Figure 1.—The Navy X-L Processing Flask

The above investigation was supported by the Department of the Navy, Bureau of Medicine and Surgery, Work Unit No. M4305.04.3006AG13.

The opinions or assertions contained herein are those of the author and are not to be construed as official or reflecting the views of the Navy Department, or the naval service at large.

References to commercial supplies and sources are intended for reader convenience, and do not imply product endorsement by the U.S. Navy or the naval service at large.

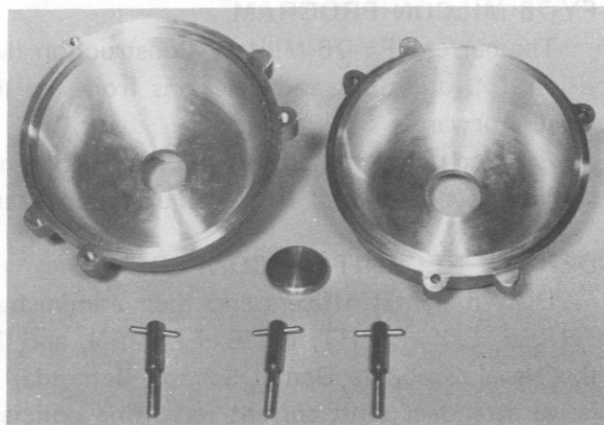


Figure 2.—The round flask halves are cast of manganese bronze, with brass knockout plug and turn bolts of cold rolled stainless steel.

a large diameter pipe, with welded plate ends held together by clamps; banded pipe; banded stone; and metal boxes — have met with varying degrees of success, but none are completely satisfactory. Casts were broken. Improper closure of a substitute flask led to distortion of prostheses. Materials did not process properly. Recovery of the prosthesis was difficult. To overcome these problems, and in conjunction with a research project sponsored by the United States Navy, the author has developed an extra large processing flask* which will satisfy many needs and uses in maxillofacial prosthetics.

The Navy X-L processing flask consists of six pieces (See Figures 1 and 2): two round flask halves cast of

*Fabricated by Special Surgical Instruments Co., Inc., 4230 Adams Avenue, San Diego, California 92116.

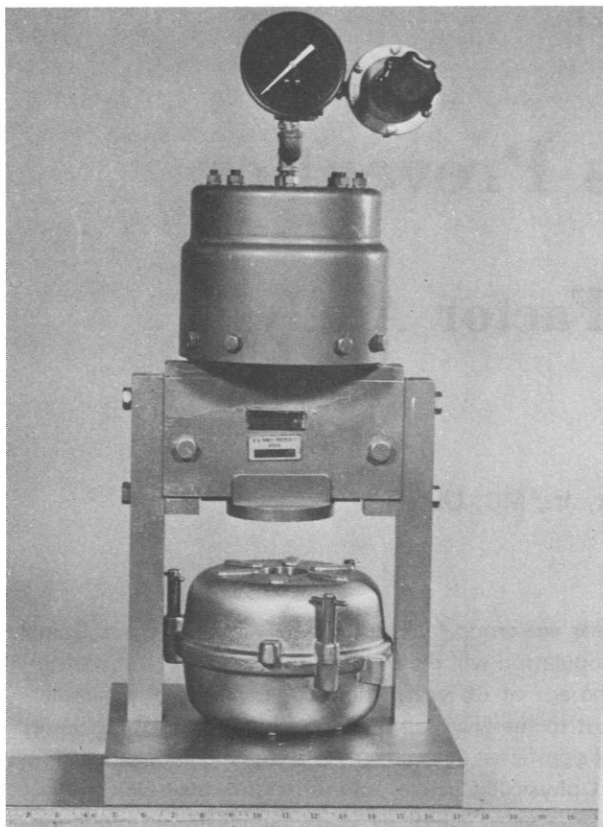


Figure 3.—Modified Pneumatic Press with the Navy X-L Flask

manganese bronze; a knockout plug machined from brass, for the lower half of the flask; and three turn bolts made of cold rolled stainless steel, for joining the halves of the flask. The flask measures six inches high by eight and one-half inches wide.

The two wide-mouth halves of the flask fit together with machine precision, to allow for accurate closure. The halves then taper to narrower bases which facilitate removal of materials used for mold formation, i.e., dental stone. Before pouring mold materials, the knockout plug is placed in a hole in the lower half of the flask and is later used during deflasking procedures. A large hole in the upper half of the flask allows for the

escape of air when pouring mold materials into the flask, or for venting a mold area.

The three "T"-shaped extended turn bolts allow for locking the upper and lower halves of the flask together, but may also be used for compression when materials to be processed are being packed. Compression is accomplished by alternately tightening the bolts to close the flask. If desired, a standard press can be modified to receive the flask (See Figure 3).*

The flask is separated by removing the bolts, tapping on the lugs located on either side of the wide mouth of the two halves, and by tapping the knockout plug. Before filling the flask, all inner surfaces of the flask should be thoroughly but lightly lubricated to facilitate easy removal of mold materials. The flask is contoured in a manner that will allow easy removal of materials by applying a few taps, through the holes at the ends of the flask with the knockout plug.

An excellent example of the utility of the Navy X-L flask can be illustrated with the fabrication of a cranial prosthesis of methyl methacrylate. In the past, Firtell, Moore, and Bartlett† have recommended the use of injection molding to reduce porosity in large acrylic-resin cranial prostheses. Injection molding was thought necessary to circumvent the thickness of the material being processed, and to overcome the poor closure encountered in using available, ill-fitting, extra large flasks. By processing at 140°(F) for seven hours, 160°(F) for one hour, and at 212°(F) for one hour (to reduce residual monomer), using the Navy X-L flask, injection molding is no longer necessary. Large prostheses with the clarity of clear glass are recovered.

Acknowledgment:

The author wishes to express appreciation for the technical services of Mr. R.C. Anderson and Mr. M.L. Donnan.

*Coe-Bilt, Coe Laboratories, Inc., Chicago, Illinois; modified by Special Surgical Instruments Co., Inc., San Diego, Calif.

†Firtell DN, Moore DJ and Bartlett SO: A radiographic grid for contouring cranial prosthesis. J Prosthet Dent 25:439-445, Apr 1971.

Atherosclerosis Prevention

A Proposed Risk-Factor Analysis

By LCDR Michael Stek, Jr., MC, USNR*

INTRODUCTION

As physicians we have the responsibility, obligation and opportunity to work toward the end of human suffering by the prevention and cure of disease. The primary thrust of our endeavors should be the establishment of efficient preventive measures. As much, and perhaps more, energy and funding should be devoted to preventive medicine as is presently being expended on the care of patients once disease and illness have struck.

We are today faced with the ever rising costs of medical care both in the private and public sector, and the simple economic fact remains that prevention would prove much cheaper than the cure. In fact, the cure is all too often unattainable at any cost, once disease is firmly established. Furthermore, in many areas we are but neophytes, with no clear battle plan to attack such chronic diseases as atherosclerosis, the single greatest medical threat in the United States.

Atherosclerosis, often expressed clinically as coronary artery disease, has reached highly significant proportions in terms of morbidity and mortality. As a primary or complicating cause of mortality, atherosclerosis is accountable in greater than 50% of deaths.¹ Coronary artery disease (CAD) alone accounts for greater than 300 deaths per 100,000 population;¹ the rate increases to approximately 500/100,000 population in the 45-54

year age group.² Approximately 20% of the U.S. male population will die of a myocardial infarction before the age of 60 years,² and, clearly 30% of personnel lost to the Navy on medical grounds are lost because of significant atherosclerosis.³ Angiographic analysis of 41 physically active, asymptomatic, male volunteers, with a mean age of 37 years, demonstrated moderate-to-severe diffuse CAD involving two or more vessels in 46% of the individuals tested.⁴

The World Health Organization reported in 1969 that: "Coronary heart disease has reached enormous proportions, striking more and more at younger subjects. It will result in the coming years in the greatest epidemic mankind has faced, unless we are able to reverse the trend by concentrating research into its cause and prevention."⁵ Atherosclerosis may be described in no other term than a true epidemic, thus calling forth concerted preventive-medicine measures. The point to be made and stressed is that the epidemic is now at hand, and although all the research data is not in, we should implement immediate preventive measures while continuing the research programs. Risk-factor appraisal combined with an education program, dietary regulation, tobacco-product restriction, and exercise fitness, where appropriately indicated by the appraisal, is outlined as a means of basic prevention of atherosclerosis. In the proposed evaluation method of risk-factor analysis, the report places emphasis on: the patient's history, and that of his family; chemical laboratory analysis, including glucose, triglycerides, cholesterol and lipoprotein-electrophoresis studies; and non-invasive-technique cardiographic investigation, with chest X-ray, electrocardiogram, vector cardiogram, and exercise stress testing.

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The opinions or assertions expressed herein are those of the author, and are not to be construed as official or reflecting the views of the Navy Department, or the naval service at large.

DISCUSSION

A number of risk factors that are related to atherosclerosis have been elucidated. An alphabetical enumeration of some of these major factors is shown in Table 1.

TABLE 1

MAJOR RISK FACTORS IN ATHEROSCLEROSIS

FACTORS	REFERENCES
AGE -----	2, 6, 7
CALORIC INTAKE -----	2, 8
CHOLESTEROL AND TRIGLYCERIDES -----	2, 9
DIABETES -----	2, 5
ELECTROCARDIOGRAPHIC ABNORMALITIES -----	2, 6, 9
FATS (SATURATED AND POLYUNSATURATED) -----	8, 10
GENETICS (FAMILIAL HISTORY) -----	11
HYPERTENSION -----	12, 13
LACK OF EXERCISE -----	14
LIPOPROTEINS -----	15
OBESITY -----	12
RACE -----	11
SEX -----	11
SMOKING -----	16, 17
STRESS -----	18

A number of authors have focused on the need for education in identifying risk factors, and instruction of patients in order to reduce these risks, implementing an effective preventive medicine program to reduce atherosclerosis.² The Inter-society Commission on the Prevention of Atherosclerosis reported: "Impressive findings indicate that three risk factors, *hypercholesterolemia*, *hypertension*, and *cigarette smoking* are properly designated major risk factors for premature atherosclerotic disease, especially coronary heart disease." Other significant risk factors are: genetics and familial history, obesity, diabetes, elevated triglyceride level, lipoprotein aberrations, and stress. The beneficial effects of proper exercise and diet balance these deleterious risk factors.

CHOLESTEROL & TRIGLYCERIDES

Of major importance is the fact that arterial lesions of atherosclerosis cannot generally be produced in animals experimentally, without a significant modification of the diet in which saturated fats and cholesterol are increased. The intersociety commission for the prevention of atherosclerosis has shown that the risk of

developing CAD increases with rising levels of cholesterol. Of further note is that the International Atherosclerosis Project quantitated the amount of 31,000 autopsy specimens obtained from 15 cities throughout the world, concluding that atherosclerosis was highest in areas of high saturated fat and cholesterol intake, and lowest in areas where diets are generally low in cholesterol and saturated fats.¹⁹

Further evidence for this concept comes from the five-year international cooperative study of the epidemiology of cardiovascular disease. The highest five-year incidence rates were recorded for men in the U.S. and Eastern Finland. Approximately 80 and 120 per 1,000, respectively, were demonstrated for these areas of high saturated fat-cholesterol intake, in contrast to areas of low dietary fat intake such as Greece and Yugoslavia.^{2,20}

In an early U.S. study, arteries of individuals (ages 12-15 years) were found to show moderate degenerative changes.²¹ In addition, fatty deposits have been demonstrated in the main arteries of children less than 10 years of age.²²

A recent survey of Naval personnel at EPMU-7 revealed that a significant number present abnormally elevated cholesterol and triglycerides. These individuals were asymptomatic, and no previous identification of high-risk-factor potential was made. It has been shown that substitution of polyunsaturated fats and oils for saturated fats in the diet can effectively lower the cholesterol level,²³ as was confirmed in the EPMU-7 study.

A number of investigations have shown that a change, from a high cholesterol diet to a diet low in cholesterol and saturated fats, decreases the degree of atherosclerotic plaques in experimental animals, thus demonstrating the reversibility of these lesions, at least to a certain extent.²⁴

HYPERTENSION

The national cooperative pooling project^{2,25-30} concluded that a significant relationship exists between atherosclerosis and hypertension, with evidence that hypertension definitely aggravates atherosclerosis, particularly in individuals with lipid abnormalities. The relationship between the degree of hypertension and atherosclerosis is direct and continuous.

SMOKING

The report of the advisory committee to the Surgeon General of the Public Health Service established in 1964 that the average smoker has, approximately, a 70% greater chance of developing significant

atherosclerosis (manifested as CAD) than the average nonsmoker.³¹ More recent data^{2,32} continue to support this deleterious relationship, with further evidence³³ that atherosclerosis mortality increases proportionally to the extent of cigarette smoking; the earlier the onset, and the more years of cigarette smoking, the greater is the relative risk of developing significant symptomatic atherosclerosis (manifested as either CAD or stroke). At autopsy, several studies have demonstrated evidence of significantly greater degrees of atherosclerosis in the coronary arteries and aortas of smokers, compared to nonsmokers.¹⁶ The association between cigarette smoking and atherosclerosis has been shown to be independent of other significant risk factors, such as hypertension and serum-lipid abnormalities, which further magnify the effects of other risk factors when found in combination with them.³⁴⁻³⁶

COMBINATION OF RISK FACTORS

The intersociety commission on the prevention of atherosclerosis reported that individuals who were free from the three major risk factors — cigarette smoking, hypertension, and hypercholesterolemia — experienced much lower CAD mortality and morbidity rates over a ten-year period than did the individuals who presented any two or three of the above risk factors. Subjects who were free of either of these factors demonstrated but 20% of the mortality seen in individuals who presented all three traits and 33% of the mortality associated to those presenting two of the three risk factors.²

PREVENTION

The drug treatment of hypertensive patients, with diastolic blood pressures ranging from 115 to 130mm Hg, has brought about a moderate reduction in morbidity of these individuals when compared to patients without therapeutic lowering of blood pressure.³⁷ Reduction or control of the three major risk factors, alone, has shown a corresponding reduction of atherosclerosis and coronary-artery-disease risk. It is therefore strongly recommended that at least three simple measures be implemented:

- (1) Stoppage of cigarette smoking
- (2) Pharmacologic control of hypertension
- (3) Reduction of dietary cholesterol and saturated-fat intake.

Each patient should further be encouraged to adopt the following measures:

- (1) Regular exercise program
- (2) Optimal weight maintenance
- (3) Reduced stress situations.

PROPOSALS FOR NAVY-WIDE PREVENTIVE ACTION

Five general measures may be established:

- (1) Education program
- (2) Risk factor appraisal
- (3) Dietary regulation
- (4) Restriction of tobacco products
- (5) Exercise fitness program.

The educational program might consist of posters and short movie clips, to be included with feature films shown at military facilities; in brief terms the major risk factors could be identified, as well as the means of preventing atherosclerosis (i.e., nutrition and exercise).

Risk factor appraisal might be accomplished with the aid of computer-analyzed electrocardiograms (EKGs). On his next annual or reenlistment physical examination, each individual should have an electrocardiogram, fasting triglyceride, cholesterol, and blood-glucose studies, as well as personal and family history reviews to identify risk factors, in addition to the physical examination. Each individual could then receive a risk factor appraisal by the examining physician; an atherosclerosis risk-factor chart could be entered into the health record (See Table 2). Undetected and previously undiagnosed hypertensives, hyperlipidemics, and diabetics would be readily screened.

General dietary regulations should be promulgated. Three primary measures would be helpful, i.e. (1) The

TABLE 2
PROPOSED ATHEROSCLEROSIS RISK-FACTOR CHART

PATIENT _____ AGE _____ SEX _____ RACE _____

HX: A. HABITS

(1) EXERCISE PROGRAM YES _____ NO _____

DESCRIPTION _____

(2) SMOKER YES _____ NO _____ AMOUNT _____

(3) COFFEE-TEA YES _____ NO _____ AMOUNT _____

B. FAMILY HISTORY _____

C. OTHER PERTINENT HISTORY _____

PX: A. OBESITY YES _____ NO _____ WT _____ HT _____

B. HYPERTENSION YES _____ NO _____

BLOOD PRESSURE _____

C. OTHER PERTINENT PX _____

EKG _____

TRIGLYCERIDE _____ CHOLESTEROL _____ GLUCOSE _____

caloric intake should not exceed that necessary to sustain optimal weight. (2) Saturated fats in the diet should be reduced, and (3) Dietary cholesterol intake should be reduced.

It has been shown repeatedly that a number of significant risk factors are reduced with lowered caloric intake if the daily calories consumed exceeded the amount required for optimal-weight maintenance, i.e., the reduction of the degree of hypertension in obese individuals, and the reduction of blood-sugar levels in diabetics. The reduction of saturated fats and total-fat intake has been useful in lowering serum cholesterol levels. Accordingly, the saturated fats now being used (lard, butter, high butterfat-content milk) should be replaced with polyunsaturated oils, margarine, and low butterfat-content milk. Leaner meats, low-saturated-fat desserts, baked goods, and salad dressings should also be made available at military installations.

The average Naval diet contains an estimated 600-700mg of cholesterol, with the egg (egg yolk, to be exact) being the single greatest source. Limitation of egg yolk and cholesterol consumption should be encouraged.

Efforts should be made to decrease smoking by military personnel, not only through the educational program previously noted, but by imposing a strict ban on the advertising of tobacco products on military establishments and the prevention of the sale of tobacco, particularly at all military medical establishments.

A definitive, prospective, long-term trial of primary prevention is also proposed for a large select group, such as U.S. Naval Academy graduates, many of whom will be available for long-term follow-up evaluations. The suggested study could combine an extensive history and physical examination conducted prior to graduation, and yearly follow-up examinations including:

(1) *Life stress factor analysis* (as is presently being conducted by the Naval Neuropsychiatric Research Unit in San Diego).

(2) *Complete noninvasive-technique cardiographic analysis*, including electrocardiogram, vectorcardiogram, phonocardiogram, echocardiogram, chest X-ray, pulse tracings, and exercise stress testing with treadmills and isometrics (as are now being established by the Cardiology Department at Naval Hospital San Diego, Calif.).

(3) *Chemical laboratory analysis*, including SMA 4 (hematocrit, hemoglobin, white blood cell and red blood cell counts), SMA 6 (electrolytes, blood urea nitrogen, glucose), SMA 12 (total protein, albumin, calcium, phosphorus, lactic dehydrogenase, serum glutamic oxalic transaminase, alkaline phosphatase, bilirubin, creatine phosphokinase, cholesterol, uric acid, creatinine), lactic dehydrogenase isozymes, triglyceride, lipoprotein

electrophoresis, and three-hour glucose tolerance tests.

(4) The above data base could then be fed into a computer recording and analysis program, in a fashion similar to the present automated computer system of the joint Biomedical-Engineering Program, of Naval Hospital San Diego and the Naval Electronics Laboratory.

This information would form a firm data base upon which to build a sophisticated risk-factor analysis. Thus would emerge a continuous physiologic analysis of a large group of individuals, who undoubtedly will, at later points in time, present with clinical manifestations. The epidemiologic feedback can be brought into the analysis at subsequent checkpoints, quantitating the specific degree to which risk-factor analysis and control have reduced the epidemic of atherosclerosis, when compared to a control group not so extensively evaluated for risk factors.

CONCLUSION

As a final suggestion, it is recommended that a yearly atherosclerosis cooperative study-group work conference be established, with representation of the following disciplines:

- (1) Clinical
- (2) Epidemiologic
- (3) Psychiatric
- (4) Engineering, computer systems.

The problem of atherosclerosis might be reviewed, definitive preventive medicine goals could be established, and monitoring would be implemented. Yearly follow-up review meetings, for analysis of progress and appropriate alterations of the program, would then be planned and scheduled.

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SAVINGS BOND DRIVE

Secretary of Agriculture Earl L. Butz, Federal Chairman of the 1974 U.S. Savings Bond Drive, introduced this year's theme at a January 31 luncheon. The timely theme, "Share a Common Bond,"

is one which should remind Americans of our common heritage and help to promote the higher six percent interest rate voted by Congress last December.



A SHOO-IN.—Secretary of Agriculture Earl L. Butz (left), Federal Chairman of the 1974 U.S. Savings Bond Drive, appears at the Washington Army and Navy Club luncheon with COL William McSpadden, USA (right), OSD (Manpower and Reserve Affairs), bond sales director for the Department of Defense.

THE GASTROENTEROLOGISTS' CORNER

Dirty-Needle Hepatitis in Drug Users

By **RADM William M. Lukash, MC, USN***
CDR Raymond B. Johnson, MC, USN*
CDR Ronald D. Gaskins, MC, USN*
and
CDR Michael F. Fornes, MC, USN**

The medical impact of the continuing epidemic of illicit drug abuse in this country is dramatized by the enormous increase in the incidence of hepatitis related to the "dirty needle." Currently, hepatitis is considered the most common cause for hospitalization of illicit drug abusers. This fact is substantiated by studies in our military hospitals, as well as in large metropolitan hospitals, where the incidence of parenteral drug abuse is as high as 90% of all hospital admissions for hepatitis. In the midst of an epidemic of drug abuse we are in the midst of an epidemic of hepatitis.

Unfortunately, as high as 40% of young patients with dirty-needle hepatitis are not initially recognized as parenteral drug users, a fact which reflects the low index of suspicion by physicians. The frightening phenomenon of drug abuse has attained universal public awareness, even to the extent that most students recognize the various descriptive terms of drug jargon in

Table I, which lists the apparatus used for intravenous injection.

TABLE I
NEEDLE JARGON OF DRUG USERS

Main Line
Factory
Artillery
Geezer
Gun
Pop
Spike

The opinions or assertions expressed in the above article are those of the authors and are not to be construed as official, or reflecting the views of the Navy Department, or the naval service at large.

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Most pertinent to our topic of dirty-needle hepatitis is the fact that drug abusers invariably will share a syringe or needle for injections without making any attempt at prior sterilization. In addition to the list of more common substances injected by drug abusers, as

shown in Table II, there are many reports of bizarre materials used to achieve some form of "high" when the usual drugs are not available.

TABLE II
INJECTED INTRAVENOUSLY BY DRUG USERS

Narcotics
LSD
Marihuana
Amphetamines (Speed)
Barbiturates
Wine (Red Ripple)
Distilled water
Milk
Paregoric
Cocaine

Dirty needles shared by drug abusers result in a variety of serious complications shown in Table III. Most addicts will show evidence of cutaneous pits and scars at injection sites. Infections in the form of local abscesses, cellulitis, and septicemias represent the more serious complications, which can be either bacterial or mycotic in etiology. Hepatitis, however, in the form of either typical acute viral hepatitis or chronic liver disease, results in the most important overall morbidity.

The clinical status of the liver in persistent parenteral drug abusers is shown in Table IV. Abnormal liver function tests are seen in up to 75% of patients. Thirty-five percent have typical episodes of acute hepatitis. In addition, 20-30% give a history of having multiple episodes of hepatitis, indicating that possibly more than one strain of virus is involved, since classically viral hepatitis has been thought to give lasting immunity. As shown by biopsy, or at autopsy following other causes of death, chronic liver disease has been found in 20% of drug abusers. Acute liver atrophy and resultant death, in fact, has occurred in as high as 2% of patients suffering from dirty-needle hepatitis in one area in New York City.

In addition to the usual indicators of liver abnormality, the Australia antigen has facilitated detection of the most common form of liver disease in drug abusers — the so-called "hepatitis B," "serum," or

TABLE III
COMPLICATIONS OF DIRTY-NEEDLE INJECTIONS

1. Local abscess
2. Cellulitis
3. Thrombophlebitis
4. Pitted scars
5. Septicemias
 - A. Bacterial
 - B. Mycotic (*Candida*)
6. Endocarditis
7. Septic pulmonary emboli
8. Addicts' lymphadenopathy
9. Neuritis
10. Rhabdomyolysis
11. Liver disease

TABLE IV
LIVER STATUS IN ADDICTS

	Percent
Abnormal liver function tests (SGPT)	75
Acute hepatitis	35
Multiple episodes	30
Positive Australia (Au) antigen (acute)	50-70
Persistent positive Au antigen	1.2-2.6
Chronic liver disease	20
Acute liver death (New York City)	1-2

"long-incubation" hepatitis. Discovered in 1963 by Blumberg and his associates, Australia antigen has also been called: the hepatitis antigen; SH-antigen, and; the currently most accepted, hepatitis-associated antigen or HAA. Nielsen, et al., have proposed a method of distinguishing patients with certain liver diseases and normal HAA carriers by electron microscopic study of the antigen-particle distribution in serum, by differentiating: Dane particles, small spherical particles, and rod-shaped particles.

Until the discovery of the hepatitis-associated antigen, differentiation between the two forms of viral hepatitis — the so-called infectious and serum hepatitis — was most difficult and depended mainly on a history of parenteral exposure, since the clinical patterns of these two entities are so similar.

With the institution of this test, however, the specific association of HAA with serum hepatitis has been amply confirmed. As shown in Table V, it has been demonstrated in 50-95% of patients with posttransfusion hepatitis. HAA is also present in 50-70% of those drug abusers with overt hepatitis. What is more important, however, is the likelihood of a drug abuser being a carrier of the hepatitis-associated antigen. Though HAA is extremely rare in average Americans, being found in only 0.1% of the population, it may be found in association with other conditions as listed in Table VI. The usual reported incidence of positivity among heroin abusers, however, ranges from two to eight percent. In the heroin-abusing population of Atlanta, Ga., the frequency of a positive antigen in the snorters was 7%, whereas that in the needle-users was an astounding 22.4%. These figures reflect an overwhelming problem

TABLE V	
DEMONSTRATION OF AUSTRALIA ANTIGEN	
	Percent
Average Americans	0.1
Posttransfusion hepatitis	50-95
Drug users	
Acute hepatitis	50-70
Persistent or asymptomatic	1.2-2.6
Blood donors	0.06-3.6

TABLE VI	
AUSTRALIA-ANTIGEN-POSITIVE CONDITIONS	
	Percent
Acute myelocytic leukemia	18.4
Chronic lymphocytic leukemia	13.3
Down's syndrome	9.4-30
Nodular (lepromatous) leprosy	9.4

confronting the public health scheme because of the increased incidence of hepatitis in recipients of transfusions of blood obtained from drug-abusing professional donors, and in medical personnel who, in the course of their professional activities, prick their skin with needles or glassware contaminated by the blood of drug abusers who are carriers of hepatitis. An additional concern to the public at large is the mode of transmission of the virus. While "serum hepatitis" was formerly considered to be acquired only by entry of the virus through broken skin (i.e. penetration by contaminated needle or transfusion of blood from a carrier), transfer from one individual to another is now recognized even without needle penetration of the skin. Among the possible routes for transmission may be mosquitoes, oral intake of the infectious agent, and perhaps sexual intercourse.

As shown in Figure 1, in the acute case of dirty-needle hepatitis, HAA usually disappears by the time the clinical course begins and the transaminase levels peak. Failure to detect the antigen may be attributed to its transient nature, or the insensitivity of techniques. Despite the usual short-lived nature of the antigen (generally not lasting longer than four months) it may persist for many years, constituting a threat to the drug abuser who shares a dirty syringe with a "carrier" or hepatitis virus.

Infection with the hepatitis virus constitutes the most serious problem afflicting parenteral drug abusers, because perhaps only one out of three victims will manifest overt clinical hepatitis. By far, the most common course will be characterized by anicteric hepatitis, an incubation period without symptoms, or simply a

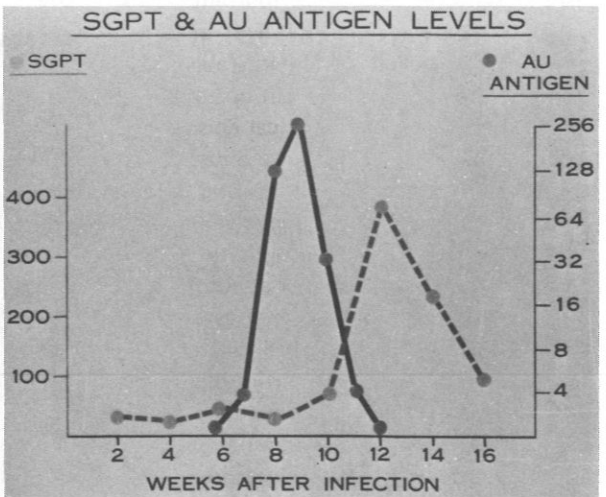


Figure 1.—Appearance of Australia antigen (solid line) is compared with the onset of transaminasemia (broken line) in Type B hepatitis.

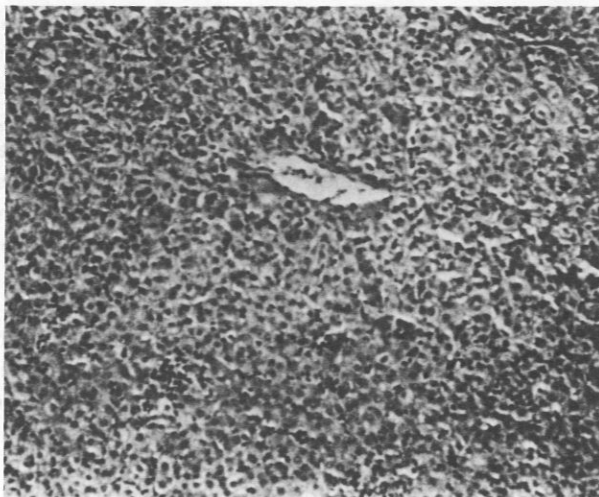


Figure 2.—Typical microscopic picture of dirty-needle viral hepatitis. Note foci of necrosis and inflammation with mononuclear cells.

carrier state of the virus. In combination with SGPT, HAA not only aids in diagnosing viral hepatitis, but potentially identifies those who can spread the disease.

Variations in the histological picture of the liver in drug abuse cover the entire spectrum of possibilities. As shown in Figure 2, the usual histologic picture in dirty-needle viral hepatitis has no specific features. Although it has previously been felt that there were no changes secondary to the drugs or adulterants themselves, Popper has now described "junk" hepatitis (See Figure 3), a possible result of introducing contaminated material into the vein along with the drug. In contrast to the usual histologic appearance of acute viral hepatitis, "junk" hepatitis is characterized by a more significant infiltration and inflammation of the portal

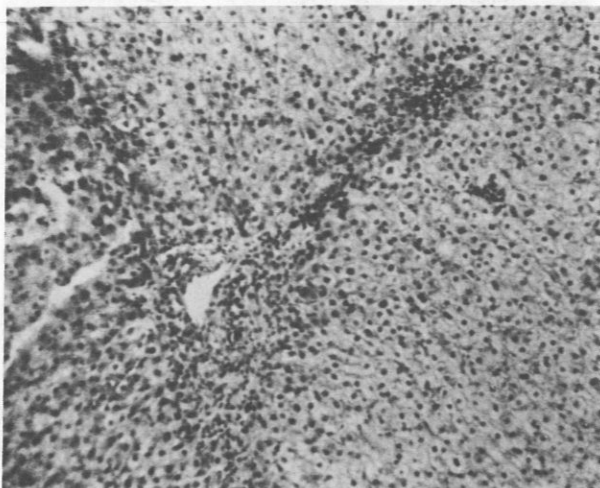


Figure 3.—"Junk" hepatitis is characterized microscopically by portal triaditis.

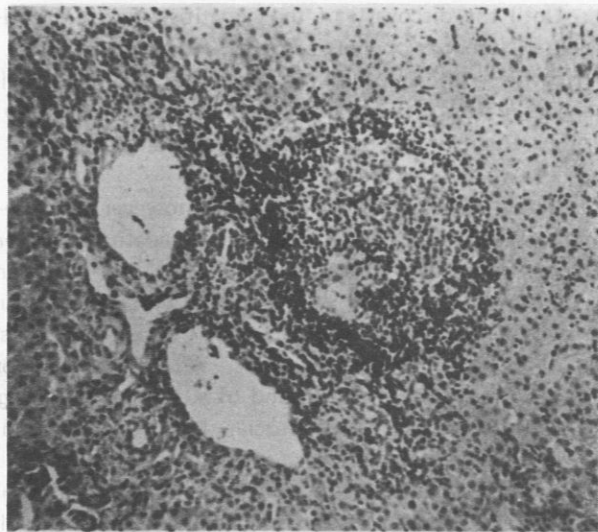


Figure 4.—Microscopic picture of persistent hepatitis.

tracts. Eosinophiles and various other inflammatory cells may be seen in these tracts. Occasionally, even doubly refractile material can be demonstrated. This form of hepatitis appears only to represent a histologic manifestation, having little relation to the outcome of the disease.

The biggest problem confronting those with liver abnormalities secondary to drug abuse is that of chronic liver disease. As shown in Figure 4, chronic persistent hepatitis is characterized histologically by inflammatory infiltration, preserved lobular architecture, and slight-to-absent fibrosis. On the other hand, chronic aggressive hepatitis (See Figure 5) is accompanied by fibrosis and inflammation in portal zones, extending into the lobules with widespread piecemeal necrosis.

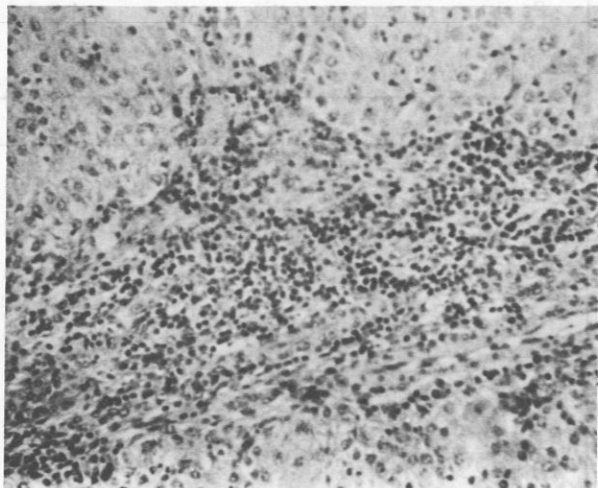


Figure 5.—Microscopic representation of chronic aggressive hepatitis.

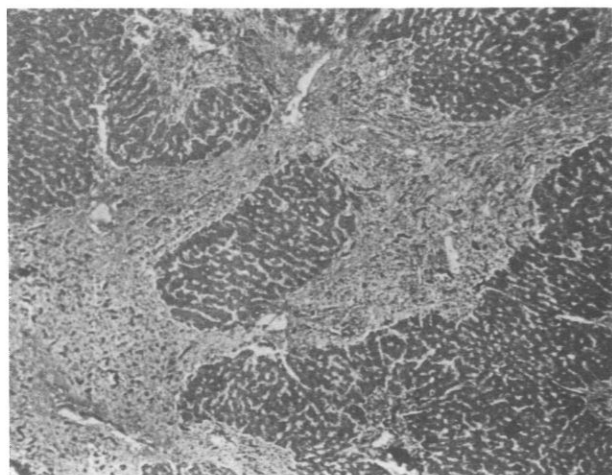


Figure 6.—Microscopic picture of macronodular postnecrotic cirrhosis.

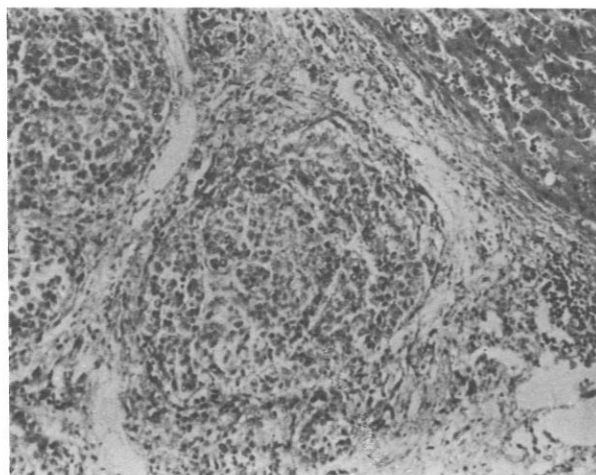


Figure 7.—Microscopic picture of hepatocellular carcinoma, a possible complication of chronic liver disease in the drug user.

These changes may progress to frank cirrhosis of the macronodular or postnecrotic type seen in Figure 6, with regenerating nodules and broad bands of fibrosis encompassing several lobules, a picture of complete lobular disarray.

It is important to establish the mechanism for this chronicity. The concomitant problems of alcoholism and drug abuse may certainly lead to nutritional cirrhosis. In fact, the drug-abusing individual with hepatitis has a three- or fourfold increase in the frequency of fibrosis if he drinks more than 32 ounces of alcohol a week, compared to those whose alcohol ingestion measures less than ten ounces a week. Other factors influencing the development of chronicity include: alteration of liver blood flow accompanying acute mesenchymal-cell reactions, a greater pharmacological reactivity to the drug, and decreased immune reactivity of the host who is a drug abuser.

Finally, there is now substantial concern about the development of hepatic carcinoma in these patients. (See Figure 7) Although this complication has been rarely seen as yet, it has occurred in antigen-positive cases and may eventually be shown to have a higher incidence in the drug-abusing population, associated with a greater incidence of antigen-positive chronic liver disease.

The importance of all clinical and histologic diagnosis stems from the immediate need to improve the treatment and prognosis of this disease. Present treatment of liver disease in drug abusers is essentially no different than treatment of liver disease in non-drug-abusers. This applies equally to the acute and chronic forms of hepatic disorders, as well as to the usual temporizing measures employed in acute liver failure. In drug abusers, however, treatment may be complicated

by the fact that such a population tends to have a higher incidence of occult infection, chronic alcoholism, and poor nutritional status.

Throughout the duration of the illness, it is the physician's responsibility to impress upon the patient the significance and extent of the public health hazard that is imposed. This is particularly applicable to the "carrier." While an effective hepatitis vaccine may evolve through Krugman's work, for the present, prevention begins and ends with the drug abuser himself. Once he becomes aware of the real danger associated with transmission of an infectious agent through his needle, his peer group may also come to realize the treacherous risk involved in sharing the same needle.

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EXUDATIVE PHARYNGITIS:

Differential Leukocyte Count of Exudate Smear to Suggest an Etiologic Diagnosis

By LCDR Glenn R. Hodges, MC, USNR*

LCDR W. Hilberg, MC, USNR**

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LT James D. Gagnon, MC, USNR††

The difficulty in making a clinical etiologic diagnosis of pharyngitis is well established.^{1,2,3} This has led to the routine use of throat cultures to identify those patients who should receive antibiotic treatment.⁴ Frequently, in the emergency room or night clinic, patients are seen only on the initial visit with no opportunity for follow-up. In this situation, a simple procedure to determine which patients should receive antibiotic treatment would be beneficial. For our patients who present exudative pharyngitis, we use a differential leukocyte count of a Wright's-stained exudate smear to distinguish viral from bacterial exudative pharyngitis. Observations supporting the use of this procedure are reported.

The opinions and assertions contained in the above article are those of the authors, and are not to be construed as official or reflecting the views of the Navy Department, or the naval service at large.

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METHODS

Exudate smears were obtained on the initial clinic visit of the following patients presenting with exudative pharyngitis: (1) 18 to 20-year-old naval recruits seen at military sick call, and; (2) 15 to 30-year-old patients presenting to the general practice clinic or emergency ward at Naval Hospital, Great Lakes, Ill.

Simultaneous exudate samples for viral cultures were obtained from patients in group 1. Bacterial cultures were not obtained for this group because of the extremely low incidence of streptococcal carriage, and the rare occurrence of streptococcal pharyngitis in this population as a result of the prophylactic use of benzathine penicillin.⁵ Throat cultures, peripheral blood leukocyte and differential counts, and Monospot Tests* were obtained from patients in group 2.

Viral isolation was accomplished using standard techniques.⁶ Streptococci found to be beta-hemolytic on ovine blood agar were grouped using the bacitracin disc method.⁷

*Monospot Test, Ortho Diagnostics, Raritan, New Jersey.

Exudate obtained by swabbing the pharynx was spread on a clean glass microscope slide using a rayon applicator. These smears were air dried and Wright's-stained.⁸ The slides were randomized and blinded by one of the authors (GRH), and differential leukocyte counts were obtained by a second author (RWH), counting a minimum of 200 cells.

RESULTS

Viral cultures were positive for adenovirus-7 in seven cases, and for adenovirus-4 in six cases. Five patients from group 2 had infectious mononucleosis based on a compatible clinical presentation, negative throat culture for bacterial pathogens, greater than 50% peripheral blood lymphocytes, and a positive Monospot Test. Exudate cultures from 19 patients in group 2 were positive for Group A, beta-hemolytic streptococci. Among the 19 patients with streptococcal exudative pharyngitis, 14 (73.7%) had a predominately neutrophilic exudate, whereas only three (16.7%) of the 18 patients with viral exudative pharyngitis had a predominately neutrophilic exudate (See Table 1).

TABLE 1
Results of Differential Cell Counts on Exudates

	Viral	Bacterial
	(Number of patients)	(Number of patients)
Monocytic Predominance*	15††	5††
Neutrophilic Predominance†	3††	14††
Totals	18	19

*Less than 40% neutrophiles

†More than 70% neutrophiles

††p<0.002 (X² of 9.9 using Yates' correction)

DISCUSSION

For patients who present with pharyngitis in an outpatient situation where follow-up is not possible, a simple test to determine the likelihood of bacterial versus viral etiology would be helpful.

Our data suggest that among patients with exudative pharyngitis, the differential leukocyte count of a Wright's-stained exudate smear is an aid in distinguishing viral from bacterial etiologies. The result of this simple procedure can be used to identify patients who should receive antibiotic treatment. However, culture confirmation of the diagnosis should be obtained whenever possible.

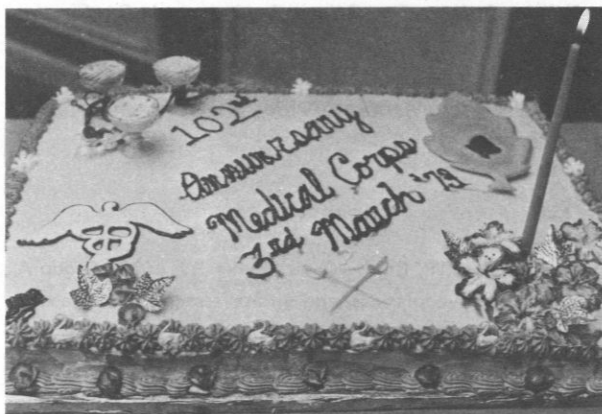
Acknowledgment:

We are indebted to Albert S. Klainer, M.D., for the stimulus to record these observations, and; to Philip D. D'Ambrosio, James M. Schoen, James L. Davis, and NAMRU-4 Field Laboratory personnel, for their technical assistance.

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102nd Anniversary Navy Medical Corps



WORK OF ART.—Staff dietician at Naval Hospital Memphis, LT Georgiana Banellis, MSC, USN reported a slight mishap that called for baking a cake in a hurry. The final result met the test, with caduceus and oak leaf to boot.



MEMPHIS CELEBRATES.—CAPT David C. Beer, MC, USN (left), CO of Naval Hospital Memphis, Tenn., and LT Barry Ashkinaz, MC, USN share cake-cutting ceremonies in Memphis. CAPT Beer was the senior medical officer and LT Ashkinaz the junior medical officer present at the celebration of the Medical Corps' 102nd anniversary in March 1973.



BIRTHDAY GREETINGS.—RADM Bartholomew W. Hogan, MC, USN (Ret.), 26th Chief of the Bureau of Medicine and Surgery, greets friends at the Navy Medical Corps' 102nd anniversary party at Bethesda, Md.



ANNIVERSARY CEREMONY.—RADM James Lee Holland, MC, USN (Ret.), the oldest medical officer present, cuts the birthday cake in the company of LT Otis E. Engelman, MC, USN (right), the youngest medical officer present, during Naval Hospital Pensacola's observance of the 102nd anniversary of the Navy Medical Corps. VADM Donald L. Custis, MC, USN (left), Navy Surgeon General, was guest of honor at the celebration.



FELLOWSHIP IN PERIPHERAL VASCULAR SURGERY AT NAVAL HOSPITAL SAN DIEGO

A fellowship in peripheral vascular surgery was recently established at Naval Hospital San Diego, Calif.* The availability, resources, and function of this position are herein described.

Peripheral vascular surgery has matured into a distinct discipline with standardization of practices and structured training programs. It is anticipated that, in the immediate future, certification in the practice of peripheral vascular surgery will be required by the American Board of Surgery.

Essential prerequisites for sustained quality of vascular surgery are good judgment, and technical skill of the surgeon; both attributes are developed through properly supervised training and experience. To provide a suitable clinical opportunity, a one-year fellowship in peripheral vascular surgery was instituted at Nav Hosp San Diego in Sep 1973. The first Fellow will complete the fellowship in Sep 1974. The fellowship is available for one Board-eligible/certified general surgeon each year. Hopefully, the fellowship will provide a cadre of specifically trained peripheral vascular surgeons for all naval hospitals that maintain graduate-training programs in general surgery.

A vital resource available to the fellowship is the Vascular Service, a division of the Department of Surgery. Assigned beds are available for hospitalization of active duty and retired military personnel, and their dependents. The service maintains a separate outpatient clinic. Two Board-certified general surgeons who

have had one year of specific postgraduate training in the field of peripheral vascular surgery, and a general surgery senior resident (three months in rotation) comprise the staff. In addition to the physical resources required for performing major general surgery, specific requisites are met for vascular surgery and for projects in clinical research.**

During the past two years, the Vascular Service has performed a total of 748 operations and procedures. Major vascular reconstructions (arterial, venous) totaled 387 during this period with a morbidity rate of 16.5%, and a mortality rate of 3.8%. Minor procedures (361) consisted of sympathectomies, amputations, thoracic-outlet decompressions, venous interruptions, ligations or strippings, translumbar arteriograms and miscellaneous procedures, with a morbidity rate of 3.3% and a mortality rate of 1.4%.

A Fellow has been selected for the 1974-1975 position. Physicians interested in applying for the 1975-1976 position should submit a written request to the Bureau of Medicine and Surgery, Code 316, Navy Department, Washington, D.C. 20372. Additional information concerning the fellowship may be obtained on request from the Department of Surgery, Naval Hospital, San Diego, Calif. 92134.—CDR D.R. James, MC, USN; Head, Vascular Surgery Branch of Surgical Service, Nav Hosp San Diego, Calif. ☐

*Surgical Service, Vascular Surgery Branch, Naval Regional Medical Center, San Diego, California 92134.

**Report of the inter-society commission for heart disease resources: Optimal resources for vascular surgery. *Circulation* 46:A-305 — A-324, 1972.

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SPOTLIGHT ON PENSACOLA

Nav Hosp Pensacola, Fla., recently graduated its first Family Practice intern and welcomed aboard its first full-time social worker.

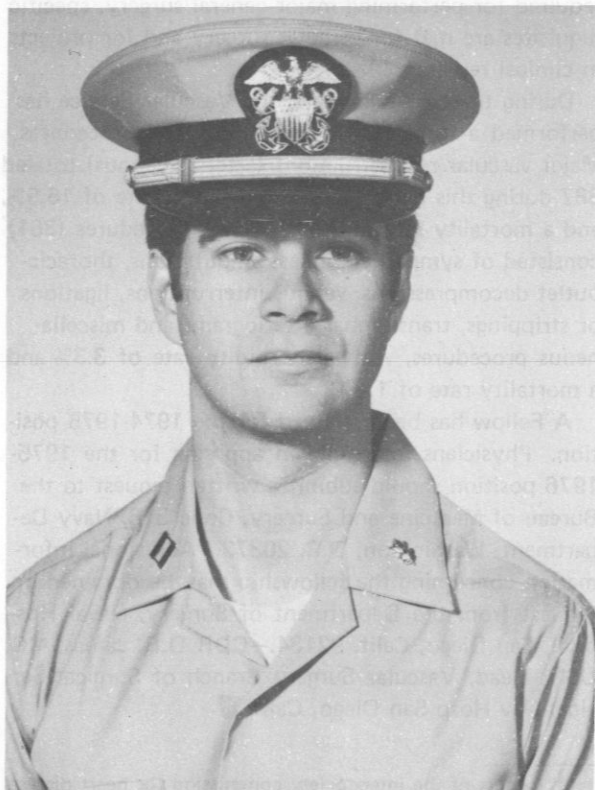
LT Otis E. Engleman, Jr., MC, USNR, a 1972 graduate of the Medical University of South Carolina, is the first physician to complete the hospital's Family Practice internship. Dr. Engleman is now a staff member of the Family Practice Service at the hospital.


Mr. Lester M. Hall is the first social worker assigned full-time to Nav Hosp Pensacola's Social Services Dept. He will provide consultation to returned prisoners of war and their dependents, to families of men missing in action, and to other Navy and Marine Corps personnel. He will also provide social services to other hospital patients.

Mr. Hall served in the Marine Corps during World War II and was honorably discharged in 1946. He

received his bachelor's degree from Baylor University, with a major in sociology and a minor in psychology. In 1951 he earned his master's degree in social work at Tulane University, New Orleans, La. Mr. Hall also holds a certificate from the Yale School for Alcohol Studies.

Mr. Hall has been a social worker with the Veterans Administration, and has held positions with the Oklahoma Association for Mental Health (executive director, 1953-1967), the United Fund of Greater Pensacola, and the Florida Bureau of Alcoholic Rehabilitation. Since 1968 he has been a guidance counselor with Transition/Second Career Planning Assistance Program at NAS Pensacola. He is a member of the Board of Directors of the Escambia County Association for Mental Health, the National Association for Social Workers, and the Academy of Certified Social Workers.—PAO, Nav Aerospace and Reg Med Cen, Pensacola.



NEWSMAKERS.—LT O.E. Engleman, Jr., MC, USNR (left) is the first physician to complete the Family Practice internship at Nav Hosp Pensacola. Mr. L.M. Hall (right) is the first social worker to be assigned full-time to Nav Hosp Pensacola's Social Services Dept. 

FOLLOW-UP FOR POWs

The 162 surviving repatriated Navy and Marine Corps prisoners of war will come to Nav Hosp Pensacola, Fla., for periodic follow-up of their physical and mental status.

"The follow-up of the repatriated group will be patterned after the 'Thousand Aviator' study, started in Pensacola by LCDR Ashton Graybiel, MC, USNR in 1940, but it will be more comprehensive," says CAPT Robert C. McDonough, CO, Naval Aerospace Medical Institute, Pensacola. The 776 survivors of the original 1,056 aviators in the "Thousand Aviator" study continue to be examined periodically in Pensacola. The study began as a psychology research project but has developed into a study of the aging processes; it is one of the oldest longitudinal studies in the world. The "thousand" are examined for two and one-half days, but the repatriated prisoners' examinations will require four days.

In February and March 1973, 136 Navy and 26 Marine Corps personnel, prisoners of war as the result of enemy action, were returned to U.S. control. Of these, 151 were naval aviators or other flight crew members. Because of the preponderance of aviation personnel and the unique qualifications of the internists, cardiologists, and other staff members at the Institute, CAPT McDonough proposed that Pensacola be designated as the single center for the continuous study of the Navy and Marine Corps repatriated prisoners.

Included in the periodic assessment will be the evaluation of medical and neuropsychiatric aspects of the returnees' health, institution of therapy if indicated, and investigation of the relationship of present (or future) disorders or diseases to the prisoner of war situation.

Long-term effects of the prisoner of war experience will be determined, as will the qualifications for continuation in a flight status. In addition, a data base for research and for adjudication of claims will be established. Information acquired through previous examinations has already been computerized and will be incorporated into the Naval Aerospace Medical Institute data bank.

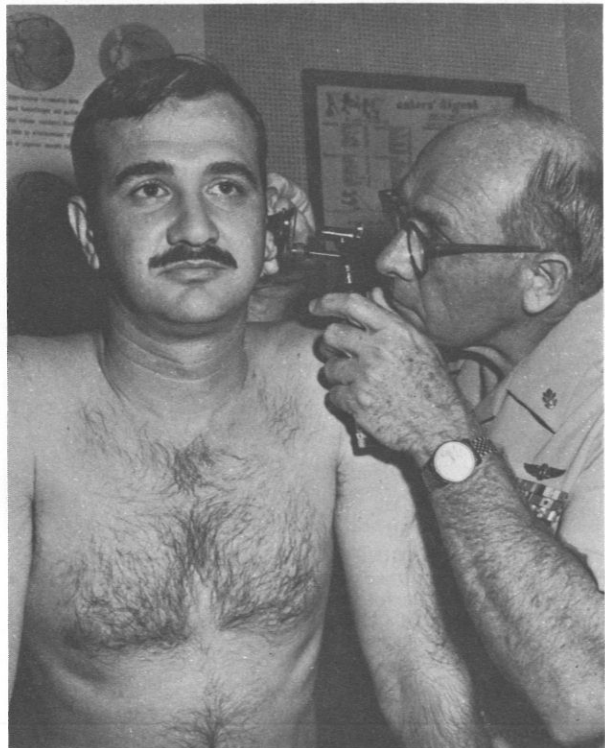
The repatriated prisoners will be examined six months after discharge from the sick list, and annually thereafter for a period of five years. The frequency of subsequent assessments will be determined later.

Biochemical measurements will be made at a local commercial laboratory. A special Southeast Asia

serology screen for parasites will be carried out by the Center for Disease Control in Atlanta, Ga.

Individuals examined will be given reports with recommendations for follow-up as indicated. Access to their confidential records will be limited to the Navy's Bureau of Medicine and Surgery in Washington, and the Center for Prisoner of War studies in San Diego, Calif.

Principal investigator for the study is CAPT Robert E. Mitchel, MC, USN, Head of the Naval Aerospace Medical Research Laboratory's Medical Sciences Department, and Chief of the Aviation Medicine Division. Throughout his Navy career, his rotation between sea duty and shore duty has been arranged to allow him to continue this study, providing continuity of examiners for the periodic follow-up examination of survivors of the "Thousand Aviator" study in Pensacola. —PAO, Nav Aerospace and Reg Med Cen, Pensacola, Fla.



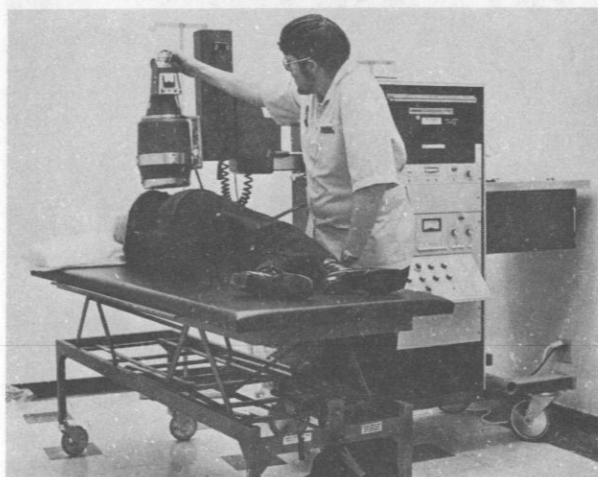
HOMEcoming FOLLOW-UP.—CAPT Robert E. Mitchel, MC, USN examines LCDR Dale V. Raebel, USN, one of the first repatriated prisoners of war to report to Pensacola, Fla., to participate in a follow-up study at the Naval Aerospace Medical Institute. LCDR Raebel, a naval aviator, was a prisoner of war for 225 days. He is now assigned to Attack Squadron 174 in Jacksonville, Fla. 🇺🇸

NUCLEAR MEDICINE CAPABILITY AT NAV HOSP BREMERTON

The Nuclear Medicine Branch of the Radiology Service has been in operation at Nav Hosp Bremerton, Wash., for a little more than a year. This facility includes a rectilinear scanner for performing scans of the liver, spleen, bones, lungs, thyroid, and brain. There is a special unit for determining radioactive thyroid uptakes. In vitro radioactive determinations, such as thyroid hormone levels, blood volumes, and vitamin B₁₂ absorption, are also made.

The workload of the Nuclear Medicine Clinic has risen steadily as Navy physicians at nearby Seattle Dispensary, Whidbey Island Hospital, and Keyport Dispensary have learned of its availability. An average of two scans per day and 350 in-vitro tests per month are currently performed. Previously, all patients who needed these diagnostic tests were referred to the Nuclear Medicine Clinic at Madigan Army Medical Center in Tacoma, Wash.

HM1 George L. Hurst, USN, a fully trained nuclear medicine technologist on the staff at Nav Hosp Bremerton, performs the tests. The clinic is supervised by LCDR L.L. Bruggeman, MC, USNR, chief of the Radiology Service.—PAO, Nav Hosp Bremerton, Wash.



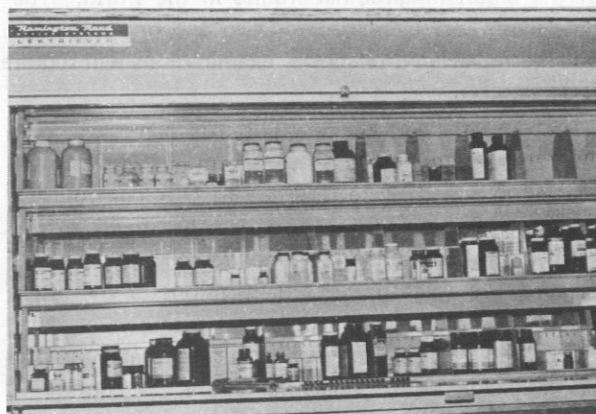
NUCLEAR MEDICINE AT BREMERTON.—HM1 G.L. Hurst, USN, nuclear medicine technologist at Nav Hosp Bremerton, Wash., performs a scan using the new rectilinear scanner in the hospital's Nuclear Medicine Department. (Photo by HM2 Peter Grattan, USN.)

NEW DRUG STORAGE SYSTEM AT NSA NEW ORLEANS

In late 1973, the pharmacy at the Naval Support Activity at New Orleans, La., acquired a Remington Rand Lektriever, Model 10218-16M, to help improve its drug storage and dispensing capabilities.

The huge machine, which measures 10 x 8 x 2½ ft and weighs almost 1½ tons, has been converted into a "Drugtriever." Its 17 shelves rotate vertically at the push of a button, quickly bringing any desired pharmaceutical item to the pharmacy technician. As a further cost saving factor, the shelves were installed at such an angle that drugs do not fall off while the shelves are rotating; it has not been necessary to buy special lipped shelves for this purpose.

The acquisition of this efficient, sophisticated machine has materially benefited health-care delivery at the New Orleans medical facility. Prescriptions are dispensed more rapidly, drug storage and capacity are increased, patient waiting time is reduced, and pharmaceuticals need to be reordered less frequently.—HMC Lemuel W. Bowers, USN; Division Leading Chief, Medical Dept., Naval Support Activity, New Orleans, La.



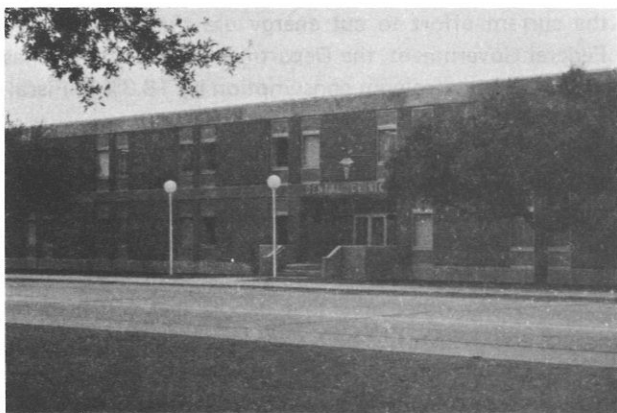
DRUGTRIEVER.—This Remington Rand Lektriever, converted to a "Drugtriever," is in daily use in the pharmacy of Naval Support Activity (NSA), New Orleans, La. Only a portion of its huge capacity is shown. Note push-button controls which appear as a series of black squares centered at the bottom edge of the lowest shelf.

DENTAL CLINIC DEDICATED AT PARRIS ISLAND

A new dental clinic at Marine Corps Recruit Depot, Parris Island, S.C., was dedicated on 4 Feb 1974.

Guest speaker at the ceremony was RADM Robert W. Elliott, Jr., DC, USN, Chief of the Navy Dental Corps.

The dental clinic, which cost more than one million dollars, is one of the most modern dental facilities in the Armed Forces. With 24,516 square feet, the new building has approximately one-third more floor space than the old wooden structure which had served Marines and their dependents at Parris Island since 1942. Forty-two dental officers perform treatment in 41 modern, fully equipped, well-lighted dental operating rooms.



NEW DENTAL CLINIC.—Parris Island's new dental clinic offers dental health services to recruits, permanent personnel, retired service personnel, and their dependents. (Official U.S. Marine Corps photograph by SGT Bob Pope.)



OFFICIAL DEDICATION.—RADM R.W. Elliott, Jr., DC, USN, Chief of Navy Dental Corps, addresses distinguished guests and officers and men of Parris Island's dental detachment during an informal dedication ceremony. The new facility has been in use since last July. (Official U.S. Marine Corps photograph by LCPL Anthony Mercado.)

The primary mission of the new clinic is to provide dental health care to recruits; approximately 2,500 permanent personnel also receive care, as do retired service personnel and their families in the local area.

The dental clinic was opened for service on 2 Jul 1973. The officer in charge is CAPT Marvin Carmen, DC, USN.—PAO, Marine Corp Recruit Depot, Parris Island, S.C. 🇺🇸

CAPT COLBY HONORED BY NAVAL GRADUATE DENTAL SCHOOL

The Naval Graduate Dental School, National Naval Medical Center, Bethesda, Md., recently held a luncheon

in honor of CAPT Robert A. Colby, DC, USN (Ret.). A distinguished oral pathologist, CAPT Colby is past president and director of the American Board of Oral Pathology, and past president of the American Academy of Oral Pathology; prior to his retirement he served as head of the Oral Histopathology Service of the School, and as chief of the Dental and Oral Pathology Division at the Armed Forces Institute of Pathology. After retiring from the Navy, he was associate professor of pathology at the Georgetown University School of Dentistry.

Attending the luncheon were many of Dr. Colby's friends and colleagues from the Naval Graduate Dental School, and also from the Army, the Air Force, the Public Health Service, and the Armed Forces Institute of Pathology. The School's Commanding Officer, RADM George D. Selfridge, DC, USN presented Dr. Colby with a letter of appreciation for the many services he has freely contributed to the School since his retirement. These have included numerous lectures in the School's long and short courses in oral pathology, professional advice on curriculums and training programs for residents in oral pathology, consultant services, and assistance in establishing differential and definitive diagnoses on surgical specimens submitted to the School's Oral Histopathology Service. CAPT Colby's generous donation of a large collection of Kodachrome slides to the School was also cited. Many of the slides had been used in the *Color Atlas of Oral Pathology*, the first edition of which was compiled and written by CAPT Colby while on active duty at the Naval Dental School.—PAO, NNMC, Bethesda, Md.



ORAL PATHOLOGIST HONORED.—RADM George D. Selfridge, DC, USN (left) presents to CAPT Robert A. Colby, DC, USN (Ret.) a plaque from the Naval Graduate Dental School. CAPT Colby was honored for his distinguished achievements in oral pathology. (Photo by R.M. Oswald, Naval Graduate Dental School, NNMC, Bethesda, Md.) 🇺🇸

NEW COPYRIGHT RULING

The U.S. Court of Claims recently ruled that providing requesters with single photocopies of journal articles does not violate copyright laws. The judgment was in response to a petition filed by Williams & Wilkins against the Federal Government alleging that the National Library of Medicine and the National Institutes of Health library, by providing single copies of journal articles to other libraries for use by health professionals, had infringed on the journal-publisher's copyright.

The court said that medical research would suffer if such photocopying were banned since "the supply of reprints and back numbers is wholly inadequate," and it is "wholly unrealistic to expect scientific personnel to subscribe regularly to large numbers of journals which would only occasionally be of interest to them." The court added that it was up to Congress to draw the line between "fair use" and "unfair use," terms frequently associated with copyright lawsuits.

The four to three decision in favor of the Federal Government overturned a preliminary report filed in February 1972, that had favored Williams & Wilkins. In a dissenting opinion, Judge Philip Nichols, Jr., forewarned that the effect of the majority decision will be to "encourage unrestricted piracy" of all authors' publications.

Dismissal of this suit is a major victory for scientific and library communities.—*National Library of Medicine News*, Vol. XXVIII, No. 12, Dec 73. ☞

NO-PEST STRIP HAZARD

NO-PEST STRIPS used to control flying insects may be a hazard to infants, the aged, and debilitated patients; the strips should not be used in patient care areas, the Environmental Protection Agency (EPA) warned recently.

The strips, which contain 2,2-dichlorovinyl dimethyl phosphate, could complicate or aggravate the condition of individuals with liver disease or organophosphate poisoning. At the direction of the EPA, the labels of the strips are being revised to read: "Do not place in hospital or clinical rooms, such as patient rooms, wards, nurseries, operating, and emergency areas."—*Environmental Health Letter*, 1 Feb 1974. ☞

WANTED: ENERGY SAVING IDEAS

The Navy is looking for suggestions from its people on how to save energy in the coming year. As part of

the current effort to cut energy use throughout the Federal Government, the Department of the Navy hopes to reduce its petroleum consumption by 18.3% in Fiscal Year 1974.

SECNAVNOTE 5305 of 28 December 1973 encourages all Navy and Marine Corps personnel to suggest ways to cut down on energy consumption. According to the notice, suggestions might deal with the operation and maintenance of buildings, plants, motorized equipment, or any other area that people feel will help to reduce energy usage. The Navy's "Beneficial Suggestion Program" was cited in the notice as an ideal way for Navy people to submit energy-saving ideas. The Beneficial Suggestion Program, which provides cash awards for suggestions that increase efficiency or save money, is outlined in SECNAV Instruction 1650.24A, as well as in Civilian Manpower Management Instruction 451. —CHINFO Newsgram, 5-74. ☞

INVITATION TO AUTHORS BY REVUE INTERNATIONALE DES SERVICES DE SANTE

The International Review of the Army, Navy and Air Force Medical Services (Revue Internationale des Services de Santé) invites officers of the Navy Medical Department to submit original manuscripts for publication. The monthly *Review* is the official publication of the International Office of Military Medicine Documentation.

Articles may be written either in English or French, should consist of 10 to 15 typewritten pages of 40 lines each, and should include an article resume that is written in both French and English. For more information, write to:

Rédacteur en Chef
Le Général Médecin J. Voncken
79, rue Saint-Laurent
B-4000 Liège (Belgique) ☞

IBM 1401 PROGRAM PROGRESS REPORT

The Chief of Naval Operations has approved requests from Naval Regional Medical Centers Bremerton, Jacksonville, Long Beach, and Newport for reutilization of IBM 1401 computer systems. Reutilization of IBM 1401 systems at NAVREGMEDCENS Bremerton and Long Beach will allow the release of punched card, accounting-machine equipment, resulting in annual lease savings of \$2,616. At NAVREGMEDCENS

Jacksonville and Newport, the annual lease savings will be \$7,092.

The following transfers of IBM 1401 computer systems have been authorized:

FROM	TO
NAVSTA KWEST	NAVREGMEDCEN JAX
NSC LBEACH	NAVREGMEDCEN LBEACH
NSC Puget Sound	NAVREGMEDCEN BREM
NAS Bermuda	NAVREGMEDCEN NPT

(Notes, No. 11, 2 Nov 1973, Naval Medical Data Services Center, Bethesda, Md.)

AMERICAN BOARD CERTIFICATIONS

American Board of Anesthesiology

LCDR Robert B. Brigden, MC, USN
LCDR Homer S. Carson, III, MC, USN
LCDR Richard E. Harris, MC, USN
LCDR Jerry O. Lenington, MC, USN
LCDR Myer H. Rosenthal, MC, USNR

American Board of Dermatology

LCDR John W. Carlisle, Jr., MC, USN
LCDR Daniel John Marnell, MC, USN

American Board of Family Practice

CDR Robert W. Higgins, MC, USNR
LCDR James C. Baggett, Jr., MC, USNR
LCDR Paul B. Flandermeyer, MC, USN
LCDR David A. Smith, MC, USNR
LCDR James M. Tozer, MC, USN
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LT Billy D. Irons, MC, USNR

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LCDR Charles J. Donlan, MC, USN
LCDR James W. Giles, MC, USNR
LCDR Gary D. Graham, MC, USNR
LCDR Jerome J. Roche, Jr., MC, USNR
LCDR Ivan S. Smith, MC, USNR
LCDR John H. Tinker, MC, USN
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LT John W. Tulloch, MC, USNR

American Board of Internal Medicine in the subspecialty of Endocrinology

CAPT Jonas Sode, MC, USN
CDR Leon P. Georges, MC, USN
LCDR Martin S. Cohen, MC, USNR

American Board of Internal Medicine in the subspecialty of Gastroenterology

CAPT Alfred R. Chappelka, Jr., MC, USN
CDR Ronald D. Gaskins, MC, USN
CDR Gerald T. Roling, MC, USN
LCDR Michael W. Kimball, MC, USN
LCDR William H. Lipshutz, MC, USNR

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CDR Daniel H. Day, MC, USN
CDR Norman D. Nelson, MC, USN
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CDR Kenneth W. Eder, MC, USN
CDR James E. Mullen, MC, USN
CDR Thomas D. Utterback, MC, USN
CDR Dale T. Zorn, MC, USN
LCDR Charles F. Budd, MC, USNR
LCDR David J. Burke, MC, USNR
LCDR Victor A. Conforti, MC, USN
LCDR Alan B. Knopf, MC, USNR
LCDR Ray F. Miller, MC, USNR
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LCDR Noel B. Rogers, MC, USNR
LCDR Joel E. Rothermel, MC, USNR
LCDR John A. Thomas, MC, USNR
LCDR Carl L. Unsicker, MC, USN

American Board of Otolaryngology

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LCDR Larry H. Bowers, MC, USN
LCDR John Y. Chew, MC, USNR
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LCDR Edward J. Glinski, MC, USNR
LCDR William R. Lomax, MC, USN
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Anatomic and Clinical Pathology*

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LCDR Stuart H. Myster, MC, USN
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LCDR David Ira Goldsmith, MC, USNR
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LCDR Paul David Isenberg, MC, USNR
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General Preventive Medicine*

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LCDR Rade Pejic, MC, USNR
LCDR Henry Francis Sears, MC, USNR

In Memoriam

LCDR Cecilia C. Flannery, NC, USN (Ret.) died 10 Dec 1973 at the Great Lakes Nav Hosp, Ill. She was born on 4 Mar 1921 in Pennsylvania. After completing the course of study at St. Elizabeth Hospital School of Nursing in Youngstown, Ohio, as an RN she was commissioned ENS in the Nurse Corps of the U.S. Navy on 9 Mar 1944. LCDR Flannery earned her BSN degree at St. John's University, Brooklyn, N.Y.

Following tours of duty at various naval hospitals from January to April 1946, LCDR Flannery attended war brides traveling from New Zealand and Australia to the U.S. in the SS *Lurline*. From April to November of that same year, as a junior Nurse Corps officer, she served in USS *Breckinridge* while it was escorting troops and dependents to China. During the next four years (1947-1950), she was a member of the staff at Nav Hosps Mare Island and Long Beach. From 1950 to 1951 LCDR Flannery was the senior nurse in USS *Breckinridge*, then transporting troops, dependents, and war casualties between Korea and Japan.

Subsequent assignments followed at Nav Hosps Great Lakes, Ill.; Bainbridge, Md.; St. Albans, N.Y.; Portsmouth, Va.; and Bethesda, Md. On 1 Sep 1957 she was promoted to the rank of LCDR. From 1962 to

1963, LCDR Flannery undertook postgraduate instruction toward her MSN degree at Catholic University in Washington, D.C. After serving on the staff at Nav Hosps Bethesda and Chelsea, she completed her courses at Catholic University and received her MSN degree. Her name was placed on the Retired List on 1 May 1970.

LCDR Flannery was a member of the Ohio State Nurses Association, American Nurses Association, National League for Nursing, and the Association of Operating Room Nurses. She held the American Defense Service Medal, Navy Occupation Service Medal, China Service Medal, World War II Victory Medal, National Defense Service Medal with Bronze Star, Korean Service Medal with three stars, and the United Nations Service Medal.

CAPT James R. Kingston, MC, USN (Ret.) died of cardiovascular disease on 11 Jan at the National Naval Medical Center, Bethesda, Md. He was born in Bovey, Minn., on 9 Sep 1907. After receiving his MD degree from the University of Minnesota in 1930, and a MPH

degree in 1939 at the Harvard School of Public Health, he maintained a private medical practice in Minn., from 1930 to 1947. On 26 Apr 1942 he was commissioned LT, MC, USNR.

He served as a medical officer at the Naval Training Center in Great Lakes, Ill., in 1942, and in 1943 assumed the position of Malaria Control Officer at the Naval Advanced Base in Tulagi, Fla. Following service at the Naval Advanced Base, Espiritu Santo from June to October 1943, he became the medical officer in USS *LST-354*, which was operating with LST Flotilla FIVE. His *LST-354* unit participated in the Solomon Islands Campaign from March 1943 to May 1944. For his major contribution in helping to support our forces throughout the campaign at Guadalcanal, CAPT Kingston received the Navy Unit Commendation Ribbon.

In 1944 he attended the Epidemiology and Tropical Medicine School at NNMC, and in Jan 1945 he became medical officer-in-charge of G-18, Unit 317, with collateral duty as Preventive Medicine Officer at the Naval Operating Base Manila, Republic of the Philippines. In Aug 1945, he became the medical officer-in-charge of the 5th Army Replacement Center. In this capacity he assisted in the repatriation of Navy and Marine prisoners of war. Following assignments at Corvallis Nav Hosp, Ore. (1945-1946), and Great Lakes Nav Hosp (1946), he augmented to the Regular Navy in Jun 1946. Between Sep 1949 and Jun 1951, CAPT Kingston attended Johns Hopkins School of Hygiene and Public Health, where he received his DPH degree. During the period 1951-1955, he served as a virologist at the Naval Medical Research Institute in Bethesda, Md., and in Cairo, Egypt. On 1 Oct 1955 he was promoted to the rank of captain.

At the Bureau of Medicine and Surgery from 1955 to 1962, he served as Deputy Director of the Research Division. During the period 1 Jan 1959 to 31 Dec 1961, he conceived, planned and organized a scientific study that identified the Eaton agent as the prevalent causative organism in primary atypical pneumonia, and established that administration of demethylchlortetracycline provided an effective treatment. For this significant contribution to the medical field, CAPT Kingston was awarded the Legion of Merit. He subsequently served in the office of Naval Research Branch Office, London, England (1962-1964), and in Jul 1964 he returned to Washington, D.C., for further service in the Navy Department's Office of Naval Research. On 1 Oct 1969 his name was placed on the Retired List (Physical Disability).

In addition to the Legion of Merit and Navy Unit Commendation Ribbon, CAPT Kingston held the American Defense Service Medal, American Campaign Medal,

Asiatic-Pacific Campaign Medal with four stars, World War II Victory Medal, National Defense Service Medal, and the Philippine Liberation Ribbon.

CAPT Kingston is survived by his widow, Irma, and four children: James, Elizabeth Ann, John Thomas, and Michael Phillip. His widow resides at 5602 Brite Drive in Bethesda, Md.

CAPT William P. Mull, MC, USN (Ret.) died of cancer on 8 Dec 1973, at the Kaiser Permanente Hospital in Harbor City, Calif., at the age of 85 years. He was born in Casar, N.C., on 21 May 1888. In 1914 he received his BS degree, and in 1915 his MA degree from Wake Forest College, N.C.; in 1916 he received his MD degree from Jefferson Medical College in Philadelphia, Pa. On 22 Aug 1917 he entered the Naval service.

Dr. Mull served at the Naval Air Station, Canal Zone from 1919 until 1921, when he received further instruction at the Naval Medical School. He subsequently completed postgraduate medical courses in internal medicine, gynecology, obstetrics, and pediatrics in 1924 and 1926. Following a tour of sea duty, he joined the staff at the Naval Dispensary in Washington, D.C. (1933-1937), and on 1 Jul 1941 was promoted to the rank of captain. Prior to his retirement on 1 Jul 1949, Dr. Mull served as a medical member of the Naval Retiring Board (1946-1949).

CAPT Mull was a Fellow of the American Medical Association and the American College of Physicians, and a Diplomate of the American Board of Internal Medicine. He held the World War I Victory Medal, American Defense Service Medal, American Campaign Medal and World War II Victory Medal.

CAPT John H. Ward Jr., MC, USN (Ret.) died on 22 Nov in Napa, Calif. He was born on 25 May 1905 in Ravena, N.Y. He received his BA degree from the University of Redlands in 1927, and his MD degree from Stanford University Medical School in 1932. On 8 Jun 1931 he was commissioned a LTJG in the Navy.

After completing his internship at the San Diego Nav Hosp in 1932, he served there as an assistant medical officer until 1933. From 1933 to 1936 CAPT Ward was a medical officer in the Army 9th Corps Area, and later became an assistant medical officer at Mare Island Nav Hosp in Calif. During the years 1936-1938 he served as a junior medical officer in the USS *Langley* and the USS *Wright*. During World War II, CAPT Ward was stationed at Pearl Harbor (1942) as

an assistant medical officer. He served on Iwo Jima, Okinawa-Gunto, and with Third Fleet Operations against Japan. He also attended the School of Aviation Medicine (1942-1943) in Pensacola, Fla., became a flight surgeon, and on 25 Mar 1945 was promoted to the rank of captain.

Subsequent assignments as medical officer were served in the USS *San Jacinto* (1943-1944), and the USS *Bennington* (1944-1946). In 1947 CAPT Ward completed a course in internal medicine at Bellevue Hospital in N.Y., and through 1948 he held a fellowship in cardiology at New York Hospital. He was the Chief of Medicine at Nav Hosp Oakland (1948-1949); at Nav Hosp Long Beach (1949-1950); and at Nav Hosp Bremerton (1950-1952). He later became Head, Medicine Branch, Professional Division of the Bureau of Medicine

and Surgery, from 1952-1954. Following hospitalization for treatment at the Oakland Nav Hosp in 1954, CAPT Ward's name was placed on the Retired List on 1 Nov 1955.

CAPT Ward was a Diplomate of the American Board of Internal Medicine, an Associate of the American College of Physicians, and a Fellow of the American College of Cardiology. He was a recipient of the American Defense Service Medal, Asiatic-Pacific Campaign Medal with four stars, American Campaign Medal, World War II Victory Medal, Navy Occupation Service Medal, the Philippine Liberation Ribbon with one star, and the Navy Commendation Ribbon with Combat "V."

He is survived by his widow, Beatrice, who resides at 623 Montecito Blvd., Napa, Calif. 🇺🇸



NEW DENTAL CLINIC.—COL C.G. Cooper, USMC (left), CO, Marine Barracks, and CAPT S.T. Elder, DC, USN (right), CO, Dental Clinic, Washington Navy Yard, cut the ribbon to open the new dental clinic at Marine Barracks, Washington, D.C.

NEW DENTAL CLINIC FOR MARINE BARRACKS, WASHINGTON, DC

On 21 Jan 1974, after an official ribbon-cutting ceremony at the Marine Barracks, Washington, D.C., the "Oldest Post of the Corps" opened the doors of a new two-chair dental clinic.

The new clinic will provide dental care for Marines stationed at the Barracks. In the past, dental care was provided at the nearby Navy Yard Dental Clinic. However, Marines were frequently unable to keep their appointments because of many short-notice ceremonial commitments. The new clinic is conveniently located for providing necessary dental treatment between ceremonies.

Officiating at the opening of the clinic were CAPT S.T. Elder, DC, USN, Commanding Officer, Dental Clinic, Washington Navy Yard; COL C.G. Cooper, USMC, Commanding Officer, Marine Barracks; and CAPT A.R. Smith, DC, USN, Staff dental officer, USMC. — PAO, Marine Barracks, Washington, D.C. 🇺🇸

UNITED STATES NAVY MEDICINE

CORRESPONDENCE AND CONTRIBUTIONS from the field are welcomed and will be published as space permits, subject to editing and possible abridgment. All material should be submitted to the Editor, *U.S. NAVY MEDICINE*, Code 18, Bureau of Medicine and Surgery, Washington, D.C. 20372.

NOTICES should be received not later than the third day of the month preceding the desired month of publication.

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NAVAL ACADEMY PREMEDICAL STUDENT.—Midshipman Rodney Savage, the first man in the Naval Academy's new premedical program to receive his acceptance to medical school, will attend Northwestern University Medical School. In addition to maintaining a 3.9 (out of 4.0) grade average, Midshipman Savage also served as brigade commander for the fall set.—PAO, U.S. Naval Academy, Annapolis, Md.

U.S. NAVY MEDICINE